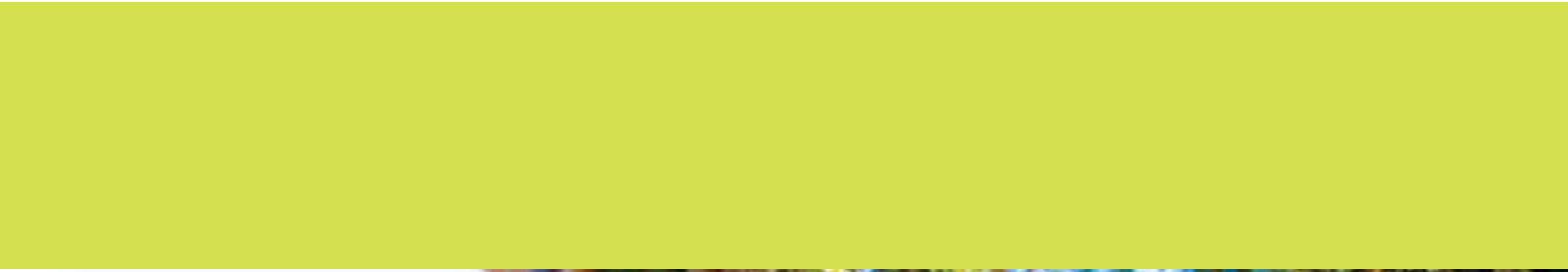




Environmental Sustainability Strategy 2009-2012

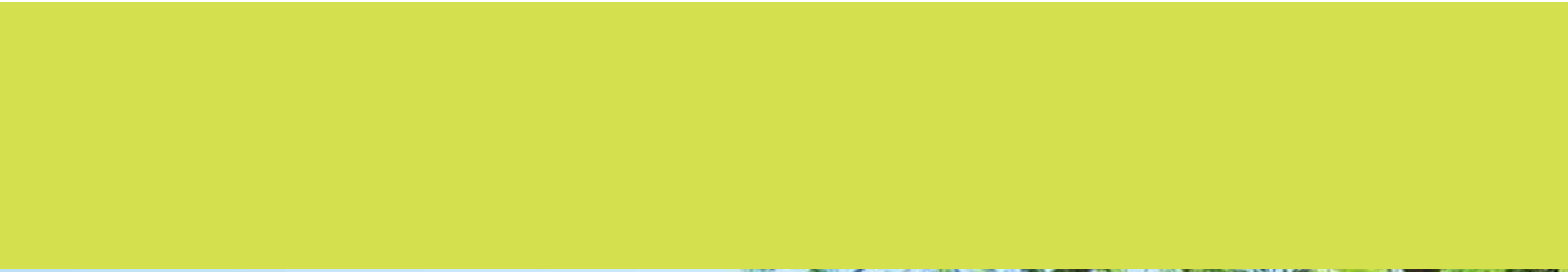






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Environmental Sustainability Strategy

2009-2012



sustainable capital city

“ Sustainability actions that increase density in the City . . . will support the sustainable growth of not only the City of Adelaide, but metropolitan Adelaide at large. ”



sustainable capital city

As South Australia's Capital City, the City of Adelaide is well placed to lead the way in environmental sustainability and to deliver significant benefits beyond the City's boundaries.

A City in a Park

Colonel William Light's City layout is assisting us to respond to the impacts of climate change and urbanisation.

The Park Lands encircle the City and provide accessible open space that reduces the need for water hungry private gardens and provides a space for nature conservation. The River Torrens transecting the centre of the City assists in cleaning stormwater and cooling the City environment.

The City's flat topography and its "grid" of streets make for a permeable and accessible City, which encourages walking and cycling. This, along with excellent public transport options, means that people living in the City are amongst those with the lowest vulnerability to increased oil (petrol) prices in metropolitan Adelaide (Figure 1).

A residential population in a dense and vibrant mixed use setting

Increasing density within the existing footprint of the City of Adelaide has seen its population grow faster than the metropolitan average with an increase of approximately 50% since 2001 (ABS). City residents enjoy excellent access to the Park Lands and public transport, and a variety of facilities, eating, entertaining, employment and education opportunities are within walking distance of their homes. City apartment households use 56% less energy (including transport) per square metre than those in the outer suburbs and less water, particularly on gardens and outdoor use (Perkins *et al.*, 2007).

The South Australian Government is planning an urban form for Greater Adelaide that is more compact and focuses on new housing and jobs in existing areas on transport corridors, and recognises the importance of the City of Adelaide in implementing this new form (The 30-Year Plan for Greater Adelaide, 2010). Increasing the number of people living in the City will have benefits for all of metropolitan Adelaide by relieving pressure on the urban fringe, increasing the number of people living in vibrant mixed use settings close to facilities, and increasing the use of sustainable commuting options including cycling and walking. The Capital City is the State's premier transit oriented development.

Sustainability actions that target density in the City, especially affordable housing, green housing and green transport, will support the sustainable growth of not only the City of Adelaide, but metropolitan Adelaide at large.

The centre for the State's workforce, education and research

The City of Adelaide is South Australia's central business district. Its workers and students come from all parts of metropolitan Adelaide and beyond. Good transport options and walkable distances provide the opportunity to reduce car reliance. People who work in the City are ten times more likely to use public transport than those employed out of the City (Perkins *et al.*, 2007).

Sustainability actions that target corporations, students, institutions and accommodation will have a major impact on environmental sustainability that will not only benefit the City of Adelaide but will have flow-on effects to the whole of the metropolitan area and South Australia.

sustainable capital city cont.

The centre for the State's tourism and events

A multitude of visitors are attracted to the City's Park Lands, international festivals, events, markets, cultural institutions and vibrant restaurant districts. The Park Lands attract approximately 2.7 million visitors, 900 events and 100 recreational licences each year. The Central Market is the State's premier market, and with a diversity of local produce on offer, has the added benefit of reducing the transport energy associated with food supply.

Sustainability actions that target the public realm and visitor attractions can reduce waste generation, water and energy use, and promote coexistence of biodiversity with a vibrant and active City community.

A motivated and influential Council workforce

Adelaide City Council is responsible for the management of Adelaide's streets, squares, Park Lands and Torrens Lake. The Council also operates nine major car parks, the Central Market, the Town Hall, Rundle Mall, the Aquatic Centre and seven community centres and libraries.

Adelaide City Council can improve the environmental sustainability of the City through management actions relating to services, public places, open spaces and buildings, and education and support for its communities.

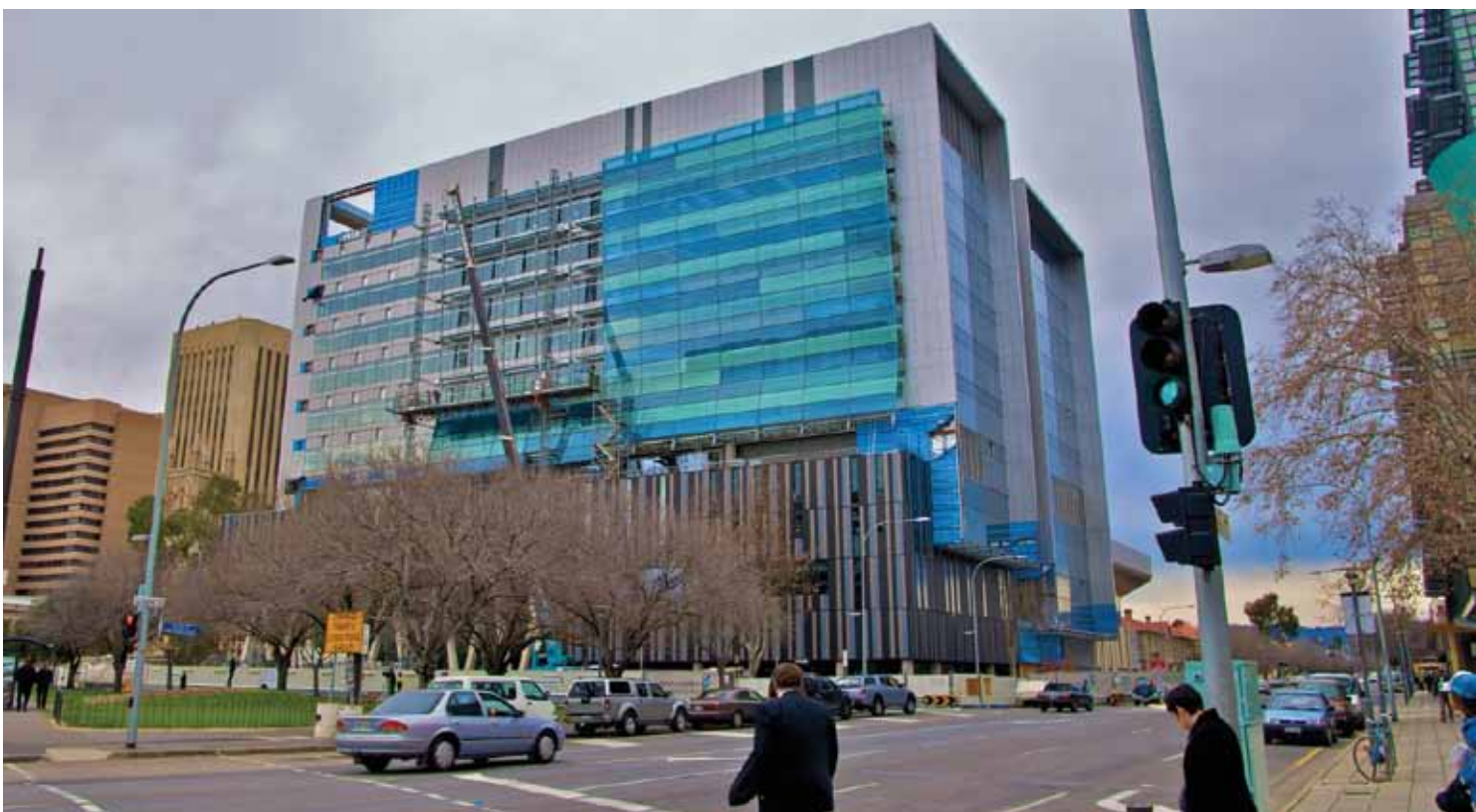
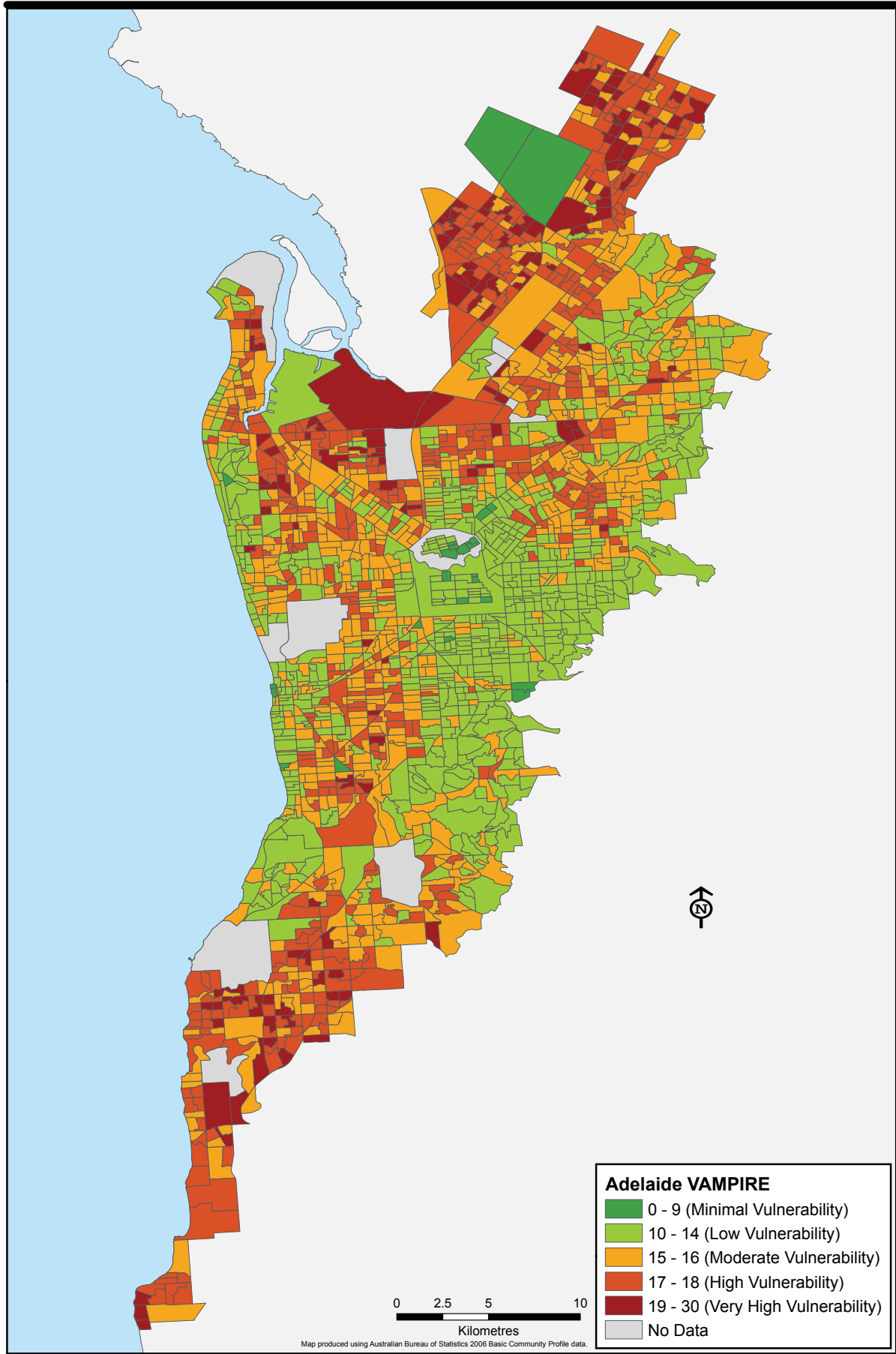


Figure 1: Oil and Mortgage Vulnerability in Adelaide, 2006.

Vulnerability Assessment for Mortgage, Petrol and Inflation Risks and Expenditure
2006 Census Data Analysis of Adelaide

Version Date: 16 June 2008





about this document

The Environmental Sustainability Strategy is Council's key strategic document for delivering an environmentally sustainable City of Adelaide. The Strategy provides details on how Council will achieve this by outlining desired environmental Outcomes for the City and Strategies required to achieve these. An Annual Action Plan will be developed with projects that Council will implement in support of its Strategies (refer Figure 2). To track Council's progress towards achieving its Outcomes, Measures of Success have been identified.

To develop the Environmental Sustainability Strategy, a Reference Group was established including the Lord Mayor, elected Council representatives and leaders in the fields of property development, environmental management and architecture.

The Reference Group considered discussion papers on a variety of environmental topics and shaped Outcome areas and Strategies that will achieve significant environmental benefits for the City of Adelaide and beyond (refer Figure 3).

The Environmental Sustainability Strategy does not provide detailed transport Strategies. Council's Integrated Movement Strategy will outline strategies relating to cycling, walking, public transport, traffic and parking. Promotion of cycling and cycling infrastructure is supported through Council's Bicycle Action Plan 2008-2011.

Figure 2

environmental sustainability strategy			
STRUCTURE	Outcomes	Strategic Directions	Action Plan
TIMEFRAME	30 years	10 years	annual
PURPOSE	Aspiration and desired qualities for the City's future	Broad directions for realising the aspiration and qualities	Ways of contributing to achieving the broad directions in a Council term
			An annual summary of Council projects, services and programs that will contribute to the achievement of Strategies

Figure 3

environmental sustainability strategy reference group
Michael Harbison – Lord Mayor
Anne Moran – Councillor, Adelaide City Council
Martin Brennan – Executive Manager, International Council for Local Environmental Initiatives
Jane Corin – President, Conservation Council of South Australia
David Craven – Executive Director (Southern), Green Building Council of Australia
Paul Downton – Director Ecopolis Architects Pty Ltd and Founder Urban Ecology Australia
Kym Good – General Manager, Adelaide & Mount Lofty Ranges Natural Resources Management Board
Peter Jackson – President (South Australia) - Urban Development Institute of Australia
Jessica Kerstjens – Executive Manager, International Council for Local Environmental Initiatives
Bryan Moulds – National Executive Director for Sustainable Growth - Property Council of Australia
Stephen Mylius – Manager Support Services - University of Adelaide
Nathan Paine – Executive Director - Property Council of Australia
Julie Pettett – CEO, Conservation Council of South Australia
Trixie Smith – Director - Capital City Committee
Patti Wenn – Executive Manager, International Council for Local Environmental Initiatives
Chair – Stuart Moseley – CEO Adelaide City Council (to September 2007)
– Debra Just – General Manager City Strategy, Adelaide City Council
<i>(Reference Group Period: March 2007 to February 2008)</i>



our vision

“ A vibrant, populous and sustainable Capital City built upon Adelaide’s heritage and lifestyle ”





our priorities

The Environmental Sustainability Strategy has been developed to support *Creating our Future*, the City of Adelaide Strategic Plan 2008-2012 (Figure 4) and *Delivering our Future*, the Corporation's Plan 2009-2012 (Figure 5).

Creating our Future, the City of Adelaide Strategic Plan 2008-2012, identifies 'An Environmentally Sustainable City' as one of six desired future Outcomes for the City and presents Strategies and Key Projects required to achieve this Outcome (Figure 4). These Key Strategies and Projects have been considered in the development of the Environmental Sustainability Strategy and will be supported by its implementation.

Delivering our Future, the Corporation's Plan 2009-2012, provides the business framework for building organisational capacity and a culture of delivery for Council, the community, business and partners, staff and the Corporation. It also provides 'Going Greener' Strategies specific to improving the environmental sustainability of the Corporation (Figure 5). The Corporation's Plan is critical to the effective implementation of the Environmental Sustainability Strategy.



Creating our Future, the City of Adelaide Strategic Plan 2008-2012

OUTCOME 6 - An Environmentally Sustainable City

- in which ecological systems and habitats thrive and enrich the City;
- in which climate change is addressed and water, energy and natural resources are conserved;
- in which people use fewer resources and generate less greenhouse gases; and
- that continues to adapt to climate change and has transitioned from oil dependency.

Strategic Directions

- Pursue environmental sustainability
- Address climate change
- Enhance water quality, ecological systems and biodiversity in the City

Strategies

- Transform the environmental performance of Council's operations by reducing waste, energy and water use and by pursuing carbon neutrality.
- Reduce the City's carbon emissions, water use and waste through projects with businesses and residents and organisations.
- Publicise the environmental benefits of City Living, including reduced energy and water use, land and transport requirements.
- Advance biodiversity and ecological outcomes through conservation of remnant habitats, habitat restoration and by encouraging community participation and interaction.
- Transform the quality of stormwater and the River Torrens by managing flows and treatment.
- Mitigate and adapt to the effects of climate change through assessing risks and developing and implementing response plans.
- Establish plantings in the City for shade and cooling.
- Promote stormwater recycling and grey water reuse.

Key Projects

- **Climate change action projects** to deliver to reduce carbon emissions by 60% by 2012.
- Two major new **solar panel installations** on Rundle Lantern and the Central Market.
- **Climate change risk** response plans and actions.
- **Environmental grants** to residents and **community groups for water reuse, solar** power and biodiversity outcomes.
- Using treated recycled water from the **Glenelg-Adelaide Pipeline** to irrigate the Park Lands and for reuse in City buildings.
- Torrens River and Lake **water quality** improvements.
- **Wetland and aquifer recharge projects** that provide biodiversity water quality and reuse benefits.
- A new **residential waste bin** system that maximises recycling.
- **Greening the Central Market** through waste and energy reduction projects.
- **Greening commercial buildings** through planning requirements and assistance programs.
- **Waste and recycling collection services**, including public spaces.
- **Residential hazardous waste** collections.
- **Horticulture services** that deliver environmental outcomes.

Delivering our Future, the Corporation's Plan 2009-2012

Delivering our Future drives the Corporation to build organisational capability and a culture of delivery through five key areas:

1. Deliver for Council – the elected Council
2. Deliver for the people we serve – the community
3. Deliver for our partners – business and partnerships
4. Deliver for our people – staff development
5. Deliver for the Corporation – organisational management

Delivering our Future identifies the following 'Going Greener' strategies which contribute directly to improving the environmental performance of Council.

The Corporation will:

- Champion Council's environmental sustainability objectives as outlined in the City of Adelaide Strategic Plan by **transforming the environmental performance of Council's operations** across the board, influencing others and leading as a model green organisation.
- Review the **environmental impact of our current activities and establish protocols** that mandate consideration and reporting of environmental implications in all business cases for future initiatives and expenditure.
- Continue to develop and implement strategies to **reduce pollution, emissions and waste, reduce use of energy, water and supplies and improve efficiency in the use of space.**
- Develop and implement action projects to deliver **energy efficiency through greater use of green and solar power** to contribute to Council's target to reduce carbon emissions by 60% by 2012.
- Promote and develop a **green culture** throughout the Corporation actively pursuing ways to change our workplaces and practices to minimise our impact on the environment.
- Initiate a comprehensive **environmental awareness-raising program** and encourage workplaces and individuals to identify green improvements with ongoing training on environmental matters in key areas.
- Continuously seek to improve environmental performance and establish a green performance register to **promote adoption of good green practices** and highlight good performers.
- Continue to use our purchasing power to influence **green procurement** and work with long term, high value suppliers and contractors to set green accreditation standards for our suppliers.
- Investing wisely in corporate ICT – continue to develop and implement our **Green IT Action Plan** with ongoing implementation of such initiatives as energy efficiency criteria in tender evaluations of ICT equipment and environmentally friendly management of computer waste and disposal.



measuring progress

Council will annually measure its progress in implementing the Environmental Sustainability Strategy.

Measures of Success have been set for each of the four Outcomes to measure our progress towards becoming an 'Environmentally Sustainable City'. Our commitment to contributing to the environmental sustainability of the State is highlighted through alignment with South Australia's Strategic Plan.

To ensure that sustainability considerations are embedded into Council operations, monitoring of environmental outcomes or impacts will also be included as a component of Council projects.

OUTCOME	MEASURE OF SUCCESS	ALIGNMENT WITH SOUTH AUSTRALIA'S STRATEGIC PLAN
A climate responsive City	<p>Reduce carbon emissions from Council's own operations by 60% by 2012¹</p> <p>Complete a climate change risk assessment and adaptation plan</p>	<p>T3.5 Greenhouse gas emissions reductions</p> <p>T3.7 Ecological footprint</p> <p>T3.12 Renewable energy</p> <p>T3.13 Energy efficiency – government buildings</p>
A water wise City	<p>Reduce Council's mains water use by 60% by 2012²</p>	<p>T3.9 Sustainable water management</p>
An ecologically sustainable City	<p>Continue to reduce the number of days that the Torrens River and Lake is closed due to poor water quality³</p> <p>Establish 30,000 local native plants in the Park Lands by 2012⁴</p> <p>Complete and progressively implement an ecological network plan for the Park Lands</p>	<p>T3.1 No species loss</p> <p>T3.2 Land biodiversity</p>
A zero waste City	<p>Recycle 60% of material presented at the kerbside by 2012</p> <p>All major events in the City are zero waste by 2012</p>	<p>T3.8 Zero Waste</p>

¹ From 1994 levels

³ From 2008/09 levels

² From 2006/07 levels

⁴ From 2007/08 level





our response

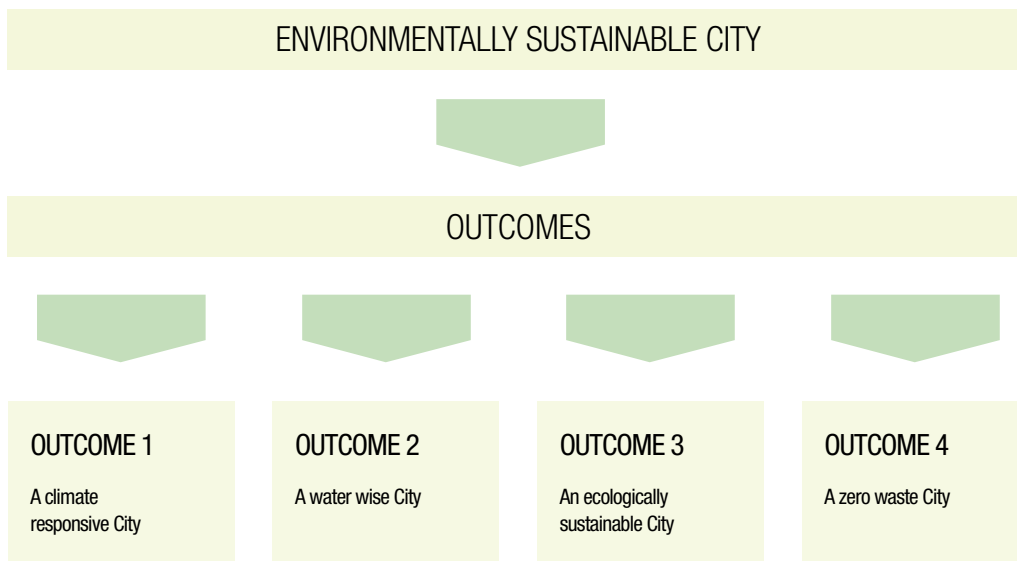
To address our priorities, four environmental Outcomes desired for the City have been adopted to guide the development of Strategies which will improve the sustainability of our operations, achieve results with our partners and assist the community in its endeavours.

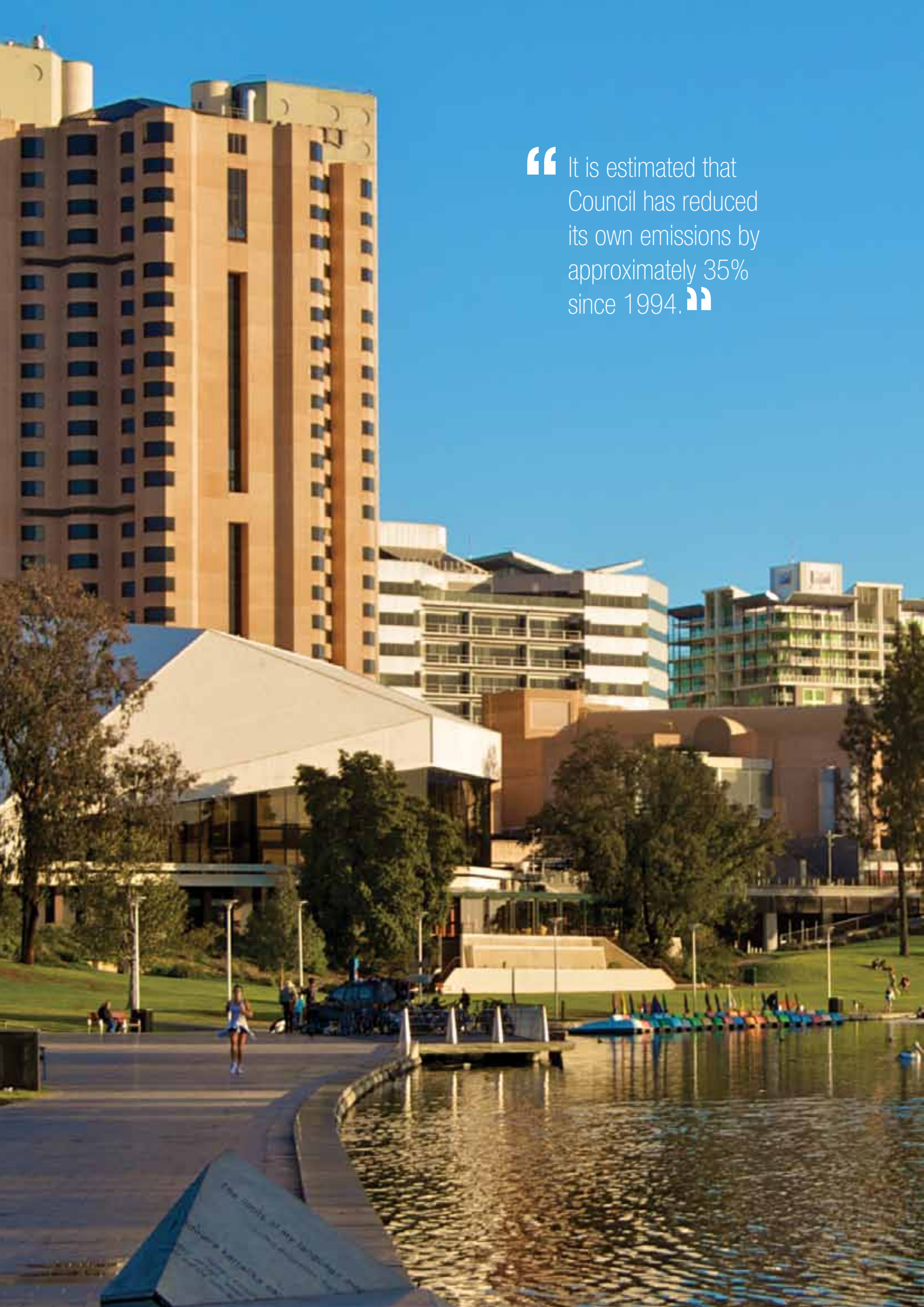
Creating an Environmentally Sustainable City can not be achieved by Council alone. Council will actively collaborate with its community, including individuals, businesses, organisations and all spheres of government, to achieve environmental Outcomes and work towards a sustainable future for Adelaide City and South Australia.

The following sections individually address each Environmental Outcome.

Each section provides information on:

- The need for change
- The current status and challenges
- Council's response (Strategic Directions and Strategies)
- Guiding principles to prioritise implementation
- Progress to date





“ It is estimated that Council has reduced its own emissions by approximately 35% since 1994. ”

Outcome 1



a climate responsive City

Background

Climate change, as a result of increases in greenhouse gas emissions, is now recognised as a significant global issue with all levels of Government taking action through reducing emissions (mitigation) and changing the way our environments are managed and shaped in response to the impacts of climate change (adaptation).

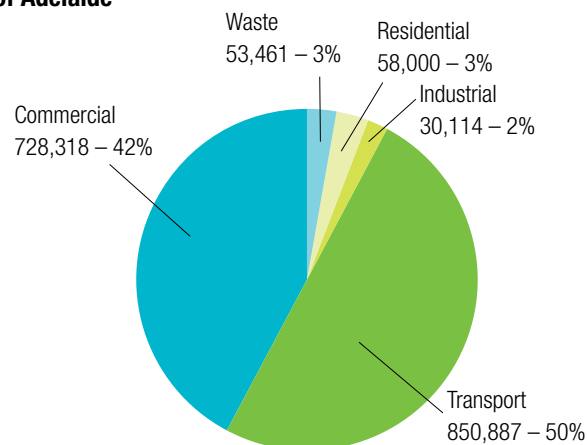
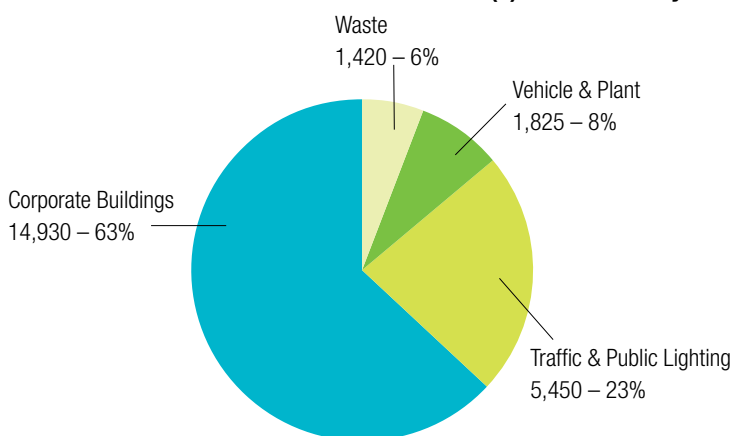
The CSIRO predicts that by 2030 the Adelaide and Mount Lofty Ranges Region will experience (Suppiah *et al.*, 2006 & McInnes *et al.*, 2003):

- An increase in annual average temperatures of up to 1.2°C
- An increase in the number of hot days over 35°C and 40°C in Adelaide each year
- A doubling of the number of heat waves (3-5 consecutive days over 35°C) in Adelaide each year
- A decrease in average annual rainfall by 1-10%
- An increase in extreme rainfall events leading to increased erosion and flooding

Current City Status

- Energy users in the City generated 1.7 million tonnes of carbon emissions in 2006/07. The transport (50%) and the commercial (42%) sectors were the highest energy users.
- Since 1998, the City's emissions have increased by 182,931 tonnes (12%).
- For journeys to work in the City, the use of public transport, bicycles and walking as the mode of transport has been increasing since 1996. However, driving is still the most common mode of transport.
- Adelaide City Council generated 23,625 tonnes of carbon emissions in 2006/07. Corporate buildings (63%) and traffic and public lighting (23%) were the highest energy users.
- It is estimated that Council has reduced its own emissions by approximately 35% since 1994.

Carbon Emissions (CO₂ equivalent tonnes 2006/7) generated from (a) Adelaide City Council's own operations and from (b) the community of the City of Adelaide



Source: City of Adelaide Carbon Emissions Inventory (International Council for Local Environmental Initiatives, Cities For Climate Protection Program)



Progress since October 2007

- Implementation of the Carbon Neutral Council Action Plan 2008-2012 has commenced and will reduce Council's own emissions by 60% by 2012 through energy efficiency measures, renewable energy purchase and generation.
- Confirmation of major solar panel installations for the Rundle Lantern and Central Market through the Australian Government's Adelaide Solar City Project.
- Implementation of the Bicycle Action Plan 2008-2012 has commenced including the installation of additional bike racks and bike lanes.
- Programs have been implemented to support climate change responses in the community including:
 - new incentives for the installation of solar panels and solar hot water systems;
 - business and commercial efficiency programs (Sustainable 1000 and City Switch);
 - the Sustainability Street neighbourhood education program; and
 - Earth hour.

Challenges

- Expanding the City's population and economic competitiveness while improving environmental outcomes and reducing the City's relative contribution to carbon emissions.
- Conserving energy to address peak oil, population growth and climate change.
- Addressing potential impacts to energy supply resulting from increased demand for cooling in heat waves.

- Shading and cooling the City to address increasing temperatures exacerbated in the City of Adelaide due to the heat retention of hard surfaces.
- Designing and managing buildings and open space in response to the impacts of climate change.

Guiding Principles in Implementation

The guiding principles to address climate change establish a hierarchy of actions that focus on:

- Reducing and avoiding carbon emissions
- Using renewable energy
- Offsetting emissions
- While also adapting to climate change

OUTCOME 1 - A climate responsive City

- Council's operations create zero net carbon emissions
- An energy efficient City that maximises the use of renewable energy and local renewable energy generation
- A resilient City that has adapted to climate change
- A pedestrian and cycle focused City at the heart of the State's public transport network

Strategic Direction		Strategies	Reducing emissions	Using renewable energy	Offsetting emissions	Adapting to climate change
1	Improve energy efficiency to reduce carbon emissions from buildings, operations and the public realm	1.1 Increase the number of people in the City to a sustainable level	•			•
		1.2 Promote the environmental benefits of living, working and studying in the City including reduced energy and water use and improved sustainable transport options	•			•
2	Increase local renewable energy generation and the use of renewable energy in the City	1.3 Implement a strategy that will ensure Council's buildings and operations create zero net carbon emissions by 2020 through energy efficiency and the purchase and local generation of renewable energy	•	•	•	
		1.4 Collaborate with the State Government and other organisations to increase the profile of Adelaide as a sustainable city	•	•		•
3	Adapt to climate change	1.5 Encourage energy efficiency and local renewable energy generation in new development through Development Plan provisions, strategic property projects, and supporting national rating systems	•	•		
		1.6 Reduce carbon emissions and pollution by supporting public transport, improving cycling and walking infrastructure and information, and investigating renewable energy electric vehicle charging stations	•	•		
		1.7 Encourage energy efficiency and local renewable energy generation in the community by providing education materials, business efficiency programs and incentives for solar systems to households, sporting clubs and community organisations	•	•		
		1.8 Support local responses to climate change by establishing or encouraging community gardens in the public realm or Council properties or private property				•
		1.9 Reduce carbon emissions from the City by advocating to increase the capacity of local energy generating systems that can be connected to the grid	•	•		
		1.10 Ensure public spaces, the Park Lands, Council buildings and projects consider the impacts of climate change by preparing a risk assessment and adaptation plan and responding to its recommendations				•
		1.11 Cool the City and address water shortage by increasing climatically appropriate plantings and water sensitive urban design in streetscapes and major public realm upgrades and by encouraging green roofs and green walls in the City				•
		1.12 Integrate energy efficiency into Council processes including through the development of sustainable procurement and capital works design guidelines	•			
		1.13 Prepare for and respond to the Australian Government's Carbon Pollution Reduction Scheme	•			



“ City apartments and townhouses use less water for gardens and outdoor use than the average suburban property. ”

Outcome 2



a water wise City

Background

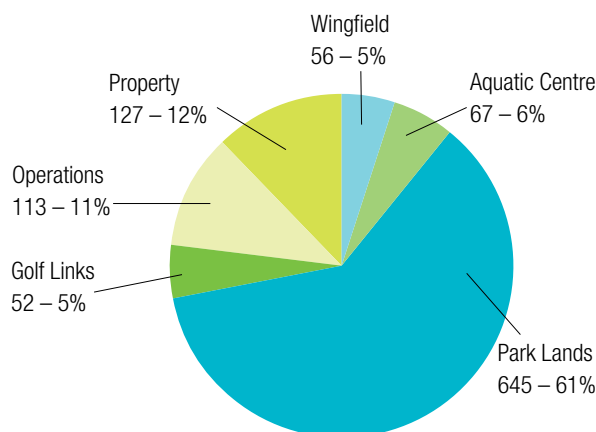
South Australia is experiencing the driest weather patterns in its recorded history (Water for Good 2009). Dry periods naturally occur in South Australia, however coupled with the effects of climate change, the current trend of drying is likely to continue, reducing flows into rivers and reservoirs and leading to a reduction in water availability for human populations and environments. With the City of Adelaide's water supply heavily reliant on the River Murray, changes to water use and adoption of alternative water supplies, such as stormwater and waste water re-use, are required.

Whilst average annual rainfall is predicted to decrease in the face of climate change, the intensity of high rainfall events is predicted to increase (Suppiah *et al.*, 2006 & McInnes *et al.*, 2003), requiring improved storage capacity in the City and Park Lands such as retention basins and tanks to both manage flooding and increase the availability of alternative water sources.

Current City Status

- In 2006/07 Council used approximately 1357 ML of water (1059 ML mains; 298 ML Torrens) for its operations.
- Since 2006/07, it is estimated that Council has reduced its mains water use by approximately 20%.
- The majority of Council mains water consumption (approximately 61%) is for use in the Park Lands.
- City apartments and town houses use less water for gardens and outdoor use than the average suburban property (SA Water Rating Analysis 2005/06).

Adelaide City Council mains water consumption (Estimated breakdown. Megalitres 2006/07)



Source: SA Water billing enquiries

⁵ Estimated extraction. Extraction is now metered and can be accurately reported in future years.



Progress since October 2007

- Construction of the Glenelg to Adelaide Park Lands Pipeline has commenced which will deliver recycled water for use in the Park Lands and City.
- A new incentive scheme has been introduced for City residents, community organisations and sporting clubs to encourage the installation of rainwater tanks.
- Tanks have been installed at the Adelaide Aquatic Centre to recycle 24 ML of backwash water per year.
- Investigations have been conducted into suitable locations in the Park Lands for Aquifer Storage and Recovery.⁶
- Water management practices continue to comply with water restrictions and incorporate efficiency improvements to Park Lands irrigation.
- Approval of new developments in the City which incorporate major stormwater capture and re-use for use in toilet flushing and irrigation.

Challenges

- Securing water supply in times of water uncertainty in the face of climate change.
- Conserving water to address drought, population growth and climate change.
- Maintaining quality City squares, Park Lands and streetscapes whilst improving water use efficiency.
- Reducing mains water use and establishing and distributing alternative water supplies.

- Identifying strategic Aquifer Storage and Recovery project sites in the Park Lands that will enhance the management of water resources within the City.

Guiding Principles in Implementation

The guiding principle to address sustainable water management establish a hierarchy of actions that focus on:

- Reducing mains water use
- Retaining and re-using water
- Shifting to sustainable water supplies

⁶ Aquifer Storage and Recovery (ASR) – the process of recharging water into an aquifer for the purpose of storage and subsequent withdrawal. (Source: Water for Good, 2009)

OUTCOME 2 - A water wise City

- The Park Lands are a sustainable open space resource for Metropolitan Adelaide in which water is efficiently used and alternative water supplies are adopted
- A City in which buildings and the public realm use water more efficiently and retain and re-use water supplies

Strategic Direction	Strategies		Reducing mains & Torrens water use	Retaining and re-using water	Shifting to alternative water supplies
1 Improve the efficiency of water use in the City	2.1	Increase the use of alternative water supplies including through the use of recycled water from the Glenelg to Adelaide Park Lands Pipeline in targeted areas of the Park Lands and City buildings, stormwater capture and re-use, and investigating aquifer storage and recovery	•	•	•
2 Reduce run-off, retain and re-use water in buildings, businesses and the public realm	2.2	Collaborate with other spheres of Government and organisations to achieve and demonstrate water use efficiency, re-use and alternative water solutions	•	•	•
3 Shift to sustainable alternative water supplies that reduce reliance on traditional supplies	2.3	Encourage greater water use efficiency, water capture and re-use, and the use of other alternative water supplies in development, including through Development Plan provisions, strategic property projects and supporting national rating systems	•	•	•
	2.4	Encourage water use efficiency and water re-use in the community by supporting business efficiency programs, and providing incentives for rainwater tanks to households, sporting clubs and community organisations	•	•	
	2.5	Encourage improved water management in businesses and households including through demonstration projects and education on building design, climatically appropriate landscapes and water capture and re-use	•	•	
	2.6	Increase water use efficiency and re-use in Council buildings, businesses and operations including through projects at the Central Market and recycling backwash water from the Adelaide Aquatic Centre	•	•	
	2.7	Increase water use efficiency and re-use in the public realm including through establishing climatically appropriate plants, investigating wetland and aquifer storage and recovery projects, and stormwater capture and re-use projects	•	•	•
	2.8	Integrate sustainable water management into Council processes including through the development of sustainable procurement, capital works and water sensitive urban design ⁷ guidelines	•	•	

⁷ Water sensitive urban design – an approach to urban planning that integrates the management of the total water cycle into the design of new developments to improve water use efficiency without adversely affecting lifestyle. (Source: Water for Good, 2009)



“ Restoring natural environments has benefits beyond species conservation. ”

Outcome 3



an ecologically sustainable City

Background

With only 2.8% of the original vegetation of the Adelaide Plains remaining (Turner, 2001), and flows and water quality in the River Torrens compromised, action is required to prevent the further loss of biodiversity⁸ and habitat degradation and to maintain attractive open space for the community.

Restoring natural environments has benefits beyond species conservation. These include using vegetation to cool the local environment, control erosion, provide water efficient plantings and attractive places for recreation; managing flooding, improving water quality and providing alternative water supplies through capturing water in wetlands; and social and wellbeing benefits of interacting with natural environments.

Current City Status

- Remnant plants, including native grasses, reeds and rushes, herbs and lilies, are widely dispersed throughout the 688 hectares of the Park Lands cared for by Council.
- The Park Lands provide habitat for native animals such as possums, bats and birds. However, loss of most the original vegetation has led to the local extinction or decline of many species, in particular small woodland birds.
- The River Torrens, for an urban watercourse, supports a surprising abundance of native fish and waterbirds. However, the Torrens Lake is closed for recreation over varying periods each year due to algal blooms.
- A total of 15 plant and 21 animal species that are recognised as of conservation significance at the State and Regional level have been recorded in the City (Long, 2003).

Species of State conservation significance recorded for the City of Adelaide

SPECIES NAME	COMMON NAME	CONSERVATION RATING*
<i>Austrodanthonia carphoides</i>	Short Wallaby-grass	R
<i>Austrodanthonia linkii</i> (var. <i>fulva</i>)	Leafy Wallaby-grass	R
<i>Austrostipa gibbosa</i>	Swollen Spear-grass	R
<i>Podiceps cristatus</i>	Great Crested Grebe	R
<i>Falco peregrinus</i>	Peregrine Falcon	R
<i>Emydura macquarii</i>	Macquarie Tortoise**	V

* National Parks and Wildlife Act 1972; R = Rare, V = Vulnerable

** Not locally native to the City of Adelaide

⁸ Biodiversity is the variety of life forms: the different plants, animals, fungi, bacteria and other microorganisms, the genes they contain and the ecosystems they form. (Source: No Species Loss - A Nature Conservation Strategy for South Australia 2007-2017)



Progress since October 2007

- Implementation of Tulya Wodli Riparian Restoration Project was completed, which has restored approximately 700 metres of the River Torrens in Bonython Park.
- The Tainmundilla Riparian Restoration Project has commenced and will work to restore the natural environment of the River Torrens between Frome and Hackney Roads.
- Recommendations of the Torrens Taskforce were implemented to improve water quality in the Torrens Lake including a biological filtration trial, carp removal, the removal of bird feeders and establishment of aquatic vegetation.
- A wetland feasibility study was conducted for Victoria Park to treat water from Park Lands Creek.
- Stage 1 of Park Lands Creek restoration project was completed.

Challenges

- Improving water quality in the Torrens Lake with potentially reduced future flows.
- Increasing use of the Park Lands while avoiding native species decline and loss.
- Finding locations in the Park Lands to establish wetlands sufficient to treat water.

Guiding Principles in Implementation

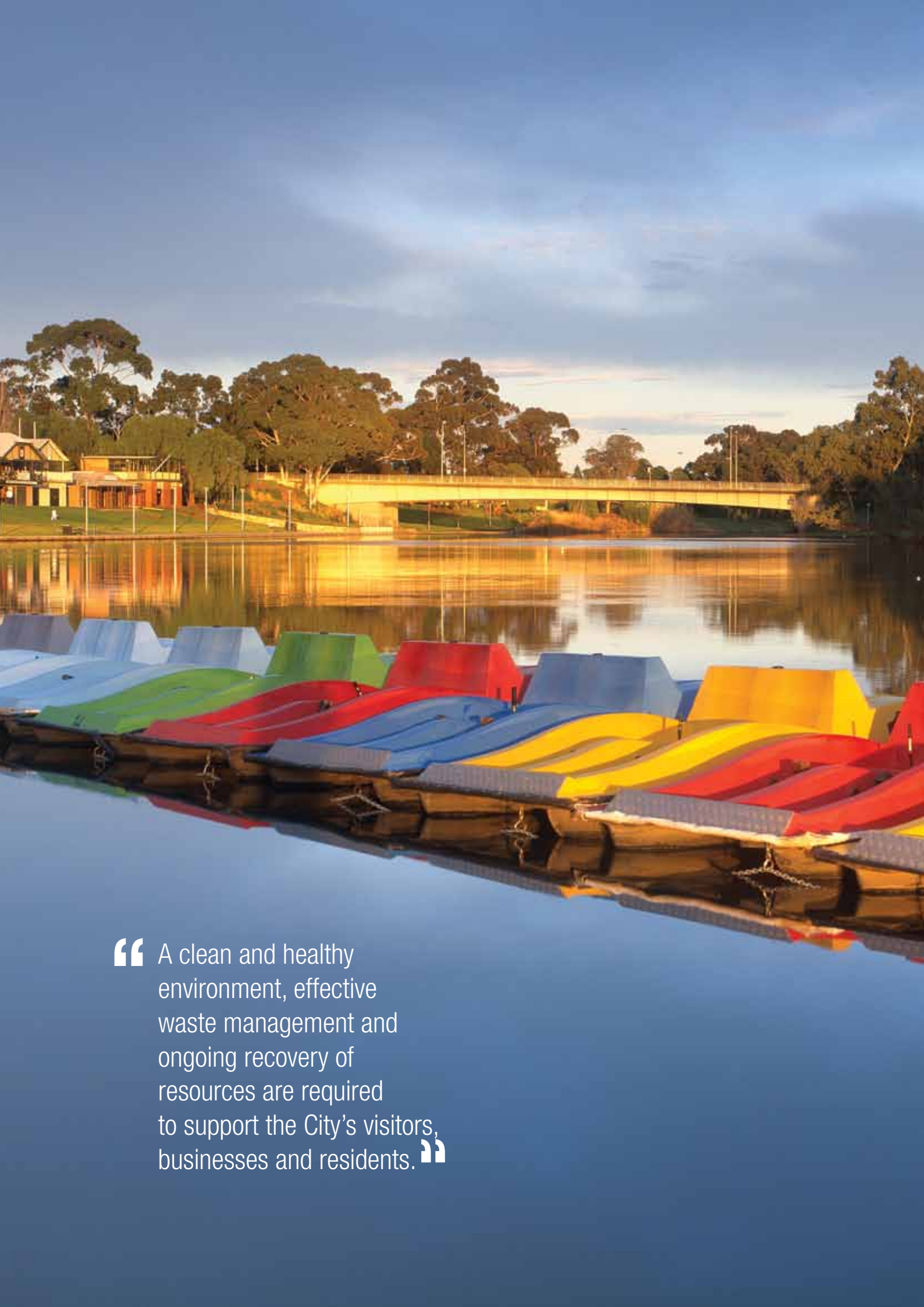
The guiding principles to address ecological sustainability establish a hierarchy of actions that focus on:

- Protecting and enhancing remnant systems and habitat
- Reinstating and linking habitats

OUTCOME 3 - An ecologically sustainable City

- The River Torrens is a healthy urban river which supports biodiversity and recreational and cultural use
- The Park Lands are the heart of a Metropolitan ecological network

Strategic Direction	Strategies		Protecting and enhancing remnant systems and habitat	Reinstating and linking habitats
1 Protect remnant vegetation and reinstate and link vegetation in the Park Lands	3.1	Collaborate to improve the environment of the River Torrens by preventing the flow of pollutants, re-establishing riparian and aquatic habitats, controlling pest plants and animals and reducing erosion	•	•
2 Use local native plants in landscaping and water sensitive urban design projects	3.2	Work to improve environmental flows in the River Torrens in collaboration with the South Australian Government and the Adelaide and Mt Lofty Ranges Natural Resources Management Board	•	
3 Improve the water quality of the River Torrens and waterways	3.3	Plan and collaborate to implement an ecological network that protects remnant biodiversity and restores local native vegetation and aquatic habitats and is cognisant of social and recreational uses	•	•
	3.4	Increase understanding and interaction with nature by providing and supporting volunteer programs for corporate and community groups, providing grants, supporting events, and installing interpretive signage in the Park Lands	•	•
	3.5	Conserve native biodiversity and reduce water use by utilising local native plants in Council landscaping projects and by providing and promoting sustainable gardening education materials to the community		•
	3.6	Protect biodiversity by controlling environmental pest plants and animals in the City and Park Lands and preventing the use of invasive plants in landscaping projects	•	
	3.7	Improve the management of biodiversity including through the establishment of guidelines, the development of staff skills and monitoring of ecological trends	•	•
	3.8	Improve the quality of stormwater and reduce erosion by laying back and revegetating creek banks and creating wetlands	•	•
	3.9	Prevent the flow of pollutants into waterways including through infrastructure and management processes	•	



“ A clean and healthy environment, effective waste management and ongoing recovery of resources are required to support the City’s visitors, businesses and residents. ”

Outcome 4



a zero waste City

Background

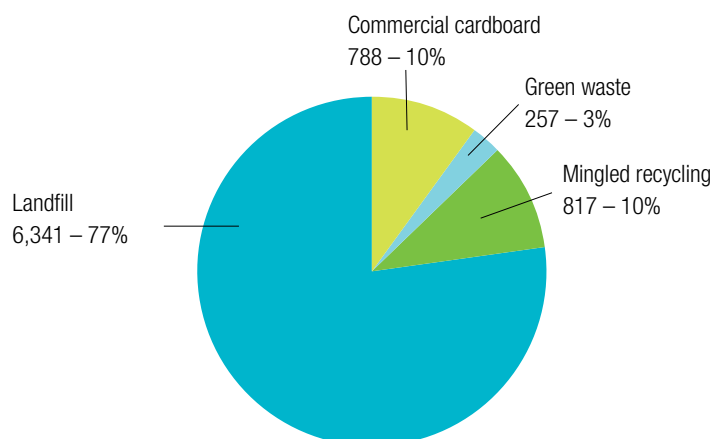
Both the Australian Government, through the National Packaging Covenant, and the South Australian Government, through Zero Waste SA, have adopted waste reduction targets to reduce reliance on landfill, minimise the impact of waste on the environment, and improve the efficiency of the use of valuable resources. Landfill is also a contributor of greenhouse gas emissions and as such reducing waste to landfill is important in mitigating climate change.

A clean and healthy environment, effective waste management and ongoing recovery of resources are required to support the City's visitors, businesses and residents.

Current City Status

- Adelaide City Council collected 8,202 tonnes of waste in 2007/08 with 6,341 tonnes (77%) taken to land fill.
- In 2007/08, 1,861 tonnes (23%) of waste was diverted from land fill.
- It is estimated that 9,000 tonnes of waste is generated annually from road and pavement construction, 1,135 tonnes from the Central Market, 10,013 tonnes from commercial and industrial operations, and 1,310 tonnes from construction and demolition.
- In 2006/07 waste contributed to 6% and 3% of Council's own and the community's carbon emissions respectively.

City of Adelaide kerbside waste collection (tonnes 2007/8)





Progress since October 2007

- Improving waste recycling services to residents and small business, through the introduction of a system that separates general rubbish, recycling, kitchen waste and green waste.
- Introduction of a new comprehensive recycling system at the Central Market that will divert plastic, foam, cardboard, metal and organic food waste from landfill greatly improving the environmental performance of this facility.
- Investigation of enhanced waste management for Council facilities, including the Adelaide Aquatic Centre, Adelaide Central Bus Station, the Golf Links and UPark car parks, to increase the level of recycling.
- Waste management for Victoria Square Arcade (adjacent to the Central Market) has been improved with increased levels of recycling and support to traders through a comprehensive education program.

Challenges

- Boosting recycling rates for residents and businesses and reducing the volume of waste going to landfill.
- Waste collection from medium to high-density development, hospitality and retail uses is managed by private contractors, limiting Council's influence.
- Encouraging a shift to recycling for major events.

Guiding Principles in Implementation

The guiding principles to address a zero waste City establish a hierarchy of actions that focus on:

- Avoid and reduce
- Reuse, Recycle, Recover
- Treat and dispose

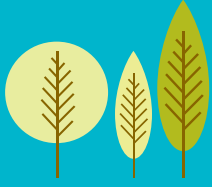
OUTCOME 4 - A zero waste City

- A City where waste recovery is maximised from residential and higher density developments, hospitality and retail uses and the public realm
- A City in which all major events are zero waste

Strategic Direction	Strategies		Avoid and reduce	Reuse, recycle, recover	Treat and dispose
1 Reduce waste to landfill from residents and small businesses through Council waste and recycling services	4.1	Maximise resource recovery from residents and small businesses, by implementing a bin system which separates general rubbish, recycling, kitchen waste and green waste, and by educating the community about its operation and reviewing service outcomes	•	•	•
2 Encourage improved resource recovery from medium to high-density developments and hospitality and retail uses	4.2	Improve waste and resource recovery in multistorey and medium to high density buildings through collaboration with Zero Waste SA, identification of waste management solutions, Development Plan provisions and guidelines for developers, property and business owners	•	•	•
	4.3	Increase resource recovery from City events by developing and implementing guidelines and encouraging appropriate infrastructure	•	•	•
3 Increase waste recovery from the public realm and events	4.4	Collaborate and investigate ways to increase resource recovery from retail, hospitality and small business including through a review of cardboard recycling services	•	•	•
	4.5	Facilitate the safe and responsible disposal of electronic and hazardous waste from the community		•	•
	4.6	Increase waste recovery from the public realm by providing permanent recycling facilities in public places		•	•
	4.7	Reduce waste to landfill and improve waste recovery from Council business, administration, facilities and operations including by providing recycling facilities, reducing paper consumption and through cleaning and waste contracts	•	•	•
	4.8	Integrate waste minimisation and the use of products with recycled content into Council processes including through sustainable procurement and capital works guidelines	•	•	
	4.9	Reduce pollution and maintain a clean City by supporting and advocating for community led litter reduction programs			•







Resources

Adelaide City Council documents (available from www.adelaidecitycouncil.com/environment)

Creating our Future, the City of Adelaide Strategic Plan 2008-2012

Delivering our Future, the Corporation's Plan 2009-2012

City of Adelaide State of the Environment Report 2005

Adelaide City Council Carbon Neutral Council Action Plan 2008-2012

Bicycle Action Plan 2008-2012

A biodiversity survey of the Adelaide Park Lands, South Australia in 2003. Department for Environment and Heritage, South Australia.

The Ecological Footprint of Adelaide City. Centre for Industrial and Applied Mathematics Institutes of Sustainable Systems and Technologies, University of South Australia

The Ecological Footprint of the City of Adelaide: Life Cycle Transport and Housing Energy Use and Emissions of Households compared with Suburban Households. (2007) Centre for Building and Planning Studies Transport Systems Centre, University of South Australia

Climate Change

There's a change on the way — An initial integrated assessment of projected climate change impacts and adaptation options for Natural Resource Management in the Adelaide and Mt Lofty Ranges Region (2006) (www.amlrnm.sa.gov.au)

Tackling Climate Change – South Australia's Greenhouse Strategy 2007-2020 (www.climatechange.sa.gov.au)

Water

Water for Good – A Plan to ensure our water future to 2050. The Government of South Australia, 2009. (waterforgood.sa.gov.au)

River Torrens

Torrens Taskforce Summary of Findings (2007) Torrens Taskforce for the Minister for Environment and Conservation. (www.amlrnm.sa.gov.au)

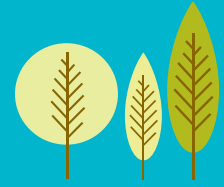
Biodiversity

No Species Loss - A Nature Conservation Strategy for South Australia 2007-2017. The Government of South Australia. (www.environment.sa.gov.au)

Biodiversity resources specific to Adelaide including species lists and maps (www.backyards4wildlife.com.au)

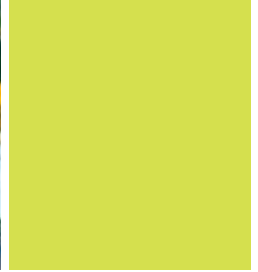
Waste

South Australia's Waste Strategy 2005-2010. Government of South Australia (www.zerowaste.sa.gov.au)



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