

City of Prospect

Environmental Action Plan 2008-2011

You and your environment

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Executive Summary

The Environmental Action Plan 2008 – 2011 sets out the environmental actions to be undertaken by the City of Prospect for the next three financial years. This Environmental Action Plan builds on an earlier Environmental Action Plan undertaken by Council in 2002 which has been reviewed as part of the creation of this Plan. Council's *Strategic Directions 2008-2011* have provided scope for the activities to be undertaken for the next three years and reporting period.

The actions and strategies within the previous Environmental Action Plan (2002) were reviewed by council staff and where relevant they were retained, and where no longer relevant or completed, they were removed. Remaining actions and strategies were then regrouped and new actions proposed.

Sustainable development principles, environmental themes and actions were prepared in liaison with various Council staff and have guided the development of the Environmental Action Plan 2008-2011.

The actions contained within the Environmental Action Plan are arranged under five environmental themes. Each of these themes has a corresponding broad goal. In summary, the themes and their corresponding broad goals contained within this action plan are:

- **Biodiversity and Open Space** - Protect and enhance our biodiversity.
- **Energy Management** - Reduce the greenhouse impact of energy use within our community.
- **Waste Management** - Reduce the amount of waste disposed to landfill through (in order of priority) avoidance, reduction, reuse and recycling.
- **Water Management** - Reduce potable water use, increase rainwater capture and reuse, and improve stormwater quality.
- **Governance and Leadership** - Lead our community in minimising their environmental impact through good governance and leading by example.

Environmental actions have been developed under each of the five environmental themes. These actions provide direction for environmental projects in the 2008/09, 2009/10 and 2010/11 financial years. Actions will be dependent on Council budgets and human resources. Potential internal (Council departments) and external partners have been considered in the development of the actions within the Environmental Action Plan.

Five key environmental projects have been identified for Council to be carried out over the life of this action plan. These are:

Biodiversity and Open Space: *Develop and Implement 'Eco Prospect' – a strategy/program for the protection, enhancement and promotion of biodiversity within the City of Prospect*

Energy Management: *Investigate (and implement where feasible) options for localised, renewable energy generation to supply 'green' electricity to at least one Council*

building, possibly all (e.g. installing photovoltaic cells, solar hot water systems, biodiesel generators for power supply etc.)

Waste Management: *Investigate and implement a kerbside waste collection service that maximises cost effective environmental outcomes*

Water Management: *Investigate potential for (and implement where feasible) aquifer storage and recovery (ASR) of stormwater for the Council area*

Governance and Leadership: *Implement the Council's Environmental Action Plan*

These five key projects have been identified as priority areas for Council to action to achieve significant environmental benefits. It is anticipated that they will require significant environmental budget allocations.

1 Introduction

The City of Prospect is an inner metropolitan Council area with a population of around 20,000. Within Council's *Strategic Plan 2008-2011*, Council has dedicated a key Strategic Direction to *Environmental Sustainability – Activities undertaken to promote environmentally sustainable practices by Council and the Community we serve* (see Figure 1 for Key Strategies). This Environmental Action Plan is responsive to Council's environmental Strategic Directions and will help to drive and implement environmental sustainability initiatives across Council and for our community.

| Key Strategies: | Relevant State Target: |
|---|--|
| <ul style="list-style-type: none"> Delivering innovative practices which promote environmental sustainability in the areas of:- <ul style="list-style-type: none"> Waste management Water usage / storage Energy efficiency Biodiversity (fauna and flora) Pollution prevention Community education and participation Contribute to and support activities that positively affect climate change Encourage the community to better manage their impact on the environment | |
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Figure 1: Excerpt from the City of Prospect Strategic Directions 2008-2011- Environmental Sustainability

The City of Prospect adopted an Environmental Action Plan in 2002. The Plan set out actions Council would take to conserve, improve and promote the environment in the Council area. Numerous actions contained within the Plan have been completed or have become outdated. The City of Prospect identified in 2006 that this plan required a review of the actions and performance measures to enable the Council to move forward with its environmental directions. The Environmental Action Plan 2008 - 2011 is the culmination of a detailed review undertaken with Council officers of the strategies and actions of the previous Plan.

This Environmental Action Plan 2008-2011 outlines the strategic context within which the Environmental Action Plan will operate, the approach undertaken to review and develop the draft Plan, the identification of potential partnerships for environmental actions, defines sustainable development principles which will guide the Plan and its actions, and sets environmental themes, goals and actions. The Environmental Action Plan forms part of the strategic planning framework for the City of Prospect.

Council engaged QED Pty Ltd to facilitate the review process and prepare a revised Environmental Action Plan that will guide the Council's environmental projects for the next three years.

1.1 Approach

This Environmental Action Plan is the outcome of an intensive internal review process of the Environmental Action Plan 2002 – 2005. The process involved a review and internal consultation phase; preparation of the draft Environmental Action Plan; further draft development; consultation and finalisation of the Plan. The implementation and promotion phase follows over the life of the Plan.

Stage 1 – Undertake Review of the current Environmental Action Plan

The Environmental Action Plan 2002 – 2005 was reviewed in a workshop with Council officers. There was representation from different sections of Council's operations to ensure a comprehensive review of the Plan's actions. The officers assessed the actions from the existing plan to determine if they were current, relevant, completed or still to be undertaken.

Following this process, any actions which were considered outdated or completed were removed. The remaining actions were reviewed for gaps and emerging environmental issues inadequately covered by those actions were added.

Actions were then further developed and elaborated upon around five themes identified by the Council staff. These themes form the basis of this Environmental Action Plan. Actions were developed through numerous meetings undertaken with Council staff.

Stage 2 – Prepare draft Environmental Action Plan

A further workshop was held with Council officers to establish a ranking system that could be applied to all actions to enable a clear direction on developing priorities. It was considered important to undertake a prioritisation process for potential actions/projects to determine a realistic work load for Council staff over the life of the Plan and to assist with setting the environmental budget.

Action priorities were determined through the use of a ranking system utilising numerous criteria. Council officers were involved in the development and application of the assessment criteria. Each action was allocated a number of priority points based on the number of criteria it satisfied. Actions with the highest number of points were considered to be the highest priority actions.

The categories that were considered for each proposed action during the prioritisation process were:

- **Multiple Environmental Benefits:** where an action has benefits for more than one environmental area (example: planting locally indigenous species- water savings and biodiversity benefits).
- **Strategic:** where an action has a positive outcome beyond environmental improvement (examples may include: strategic partnerships; increase Council's profile; or community capacity building).
- **Funding Opportunities:** where funding may be available to help cover the cost of a project through partnering with another organisation.

- **Legislative Requirements:** where Council has resolved to undertake an action or has a legal requirement to undertake the action.
- **Potential Cost Benefit:** where an action results in a cost saving to Council.
- **Flow on Actions:** the proposed action is required before further actions are undertaken.
- **Leadership:** results in Council leading by example. This includes innovative new programs that may be adopted by other Councils and actions where Council provides an example and leadership to the community.
- **Already Commenced:** the action has already commenced by Council staff.
- **Significant environmental benefit:** where the level of environmental harm is significantly reduced.

It was determined by Council officers that broad goals should be identified for each of the five environmental themes to allow for additional actions, programs or incentives that may arise over the course of the Environmental Action Plan implementation.

Council will need to be responsive to emerging environmental issues that cannot be reasonably anticipated at this stage. The Environmental Action Plan establishes a process of annual reviews whereby progress against the plan can be assessed and new and emerging actions may be identified. There will be instances where Council will also need to be quickly responsive to immediate issues as they arise.

Stage 3 – Consultation and Finalisation

The Environmental Action Plan 2008-2011 was released for public consultation. Council was keen to receive feedback from the community about the proposed direction for environmental projects over the next three financial years. Comments were considered and incorporated into the final Plan where appropriate.

Stage 4 – Promotion

The final Environmental Action Plan 2008-2011 will be promoted to the community once finalised. The Plan will be available on Council's website and hard copies will be made available where appropriate.

Stage 5 – Implementation

The Plan is expected to be implemented in a timely manner. The Elected Members will be provided with regular updates on the progress of the Plan. There will be an annual review of the Environmental Action Plan which will help to inform the budget process and provide for the inclusion of actions that may respond to the current environmental climate.

Where possible, Council staff will endeavour to attract funding from external sources to implement the actions within the Plan.

2 Prospect Profile

The Prospect City Council area comprises 779 hectares (7.79 Km²) located immediately to the north of the Adelaide City Local Government Area (LGA). It is bounded by the City of Port Adelaide Enfield to the north, the City of Charles Sturt to the west and the Town of Walkerville to the east. Suburbs in the City of Prospect include Prospect, Nailsworth, Collinswood, Medindie Gardens, Thorngate and Fitzroy, and parts of Sefton Park, Broadview and Ovingham.

The area is dominated by residential development with commercial strips along Main North Road, North East Road, Churchill Road and Prospect Road. The topography is generally flat, gently grading towards the north west.

A number of open spaces are provided for the community. These include the Prospect and Broadview ovals, St Helens Park, Prospect Estate Reserve and W.T. Smith Reserve. A few remnant species exist within these reserves.

The housing styles of the area include traditional bungalows and villas, town houses and units. The Prospect community, like many inner suburban areas, consists mostly of families and couple only households, although there are an increasing number of single person households. This trend for a higher proportion of single person households is probably due to infill development and the creation of smaller housing on individual allotments. Despite this, the number of persons per dwelling is still relatively high at 2.3 and the residential density sits at 2,473 persons per square kilometre.

At the 2006 Census, the resident population within the City of Prospect was 19,294, an increase of 748 persons (4%) since census night 2001 when it was 18,443. The median age of people in 2006 was 36, an increase of 2 years since 1991.

The 2006 Census also indicates that the majority of people living in Prospect were born in Australia (71.6%). People born in England represent 4.2% of the total population, followed by people born in Italy (2.7%), Greece (2.1%), India (2.1%) and Vietnam (0.9%).

Businesses within the Prospect Council area generally consist of commercial type land uses. There is a retail and civic precinct along Prospect Road which includes the Council offices, post office and several retail and food outlets.

The Environmental Action Plan has been developed taking into consideration the:

- Dominant urban development;
- Number and type of open spaces;
- Prospect community demographics; and
- Extent of business areas.

3 Sustainable Development Principles

Ecologically Sustainable Development (ESD) is defined as *conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained and quality of life for both present and future generations is increased*. Put simply, sustainability means meeting the needs of today while conserving our natural resources for the benefit of future generations.

The review and development of actions within the Environmental Action Plan have been guided by the following sustainable development principles. The following principles were developed with Council officers to provide a broad overarching framework for ensuring sustainable urban development within the City of Prospect.

The principles outlined below provide direction for the development and implementation of actions, and will help to facilitate low risk and integrated actions which are responsive to the local environmental needs.

Climate Change Implications

As the planet adjusts to increasing levels of carbon dioxide and other greenhouse gases in the atmosphere, changes to the climate and weather patterns are expected to increase. The Environmental Action Plan is responsive to this in two ways: first it seeks to reduce the levels of greenhouse gas emissions produced from activities within the Council area (mitigation); secondly the plan is responsive and provides for adaptation to further climate shifts if required (adaptation).

Leadership

The Council plays an important leadership role in implementing environmental sustainability initiatives that can then be rolled out and used as an example within the Council area and wider metropolitan Adelaide. The plan is structured to enable Council to set an example in its own operations and championing others both within and outside of the Council area to do the same. Ongoing strong leadership is important to the implementation of the Environmental Action Plan.

The City of Prospect's involvement in the development of the Eastern Region Alliance's Regional Environmental Management Plan is an example of Councils working together to provide leadership to others about working collaboratively when addressing some environmental issues. The regional Plan is a first for South Australian councils.

Integration

If effective environmental improvements are to be implemented within the Council area, this will need to involve the whole community including residents, businesses and Council. An integrated holistic approach to tackling environmental issues will ensure a comprehensive and successful approach. The successful implementation of this Plan will also be dependant on good working relationships with both internal and external partners.

Achievable, realistic and cost effective

The success of the Environmental Action Plan will be measured by its implementation. For that reason this action plan has sought to ensure that the actions and targets are achievable, realistic and cost effective. A review of each year's performance will be undertaken to inform the upcoming year's action list and budget.

Precautionary approach

The precautionary approach to activities affecting the environment seeks to ensure the protection of the environment. It works on the basis that if an action or policy may cause harm to the environment or there is not scientific consensus on the issue, then the activity should not be undertaken.

Responsive and flexible management

The environment is dynamic and constantly changing. There is the need for responsiveness and flexibility in the management of the environment as new issues and solutions are constantly emerging. These issues require management and actions which cannot be reasonably pre-empted.

4 Strategic Plans & Strategies

Strategic Directions 2008-2011

Council's *Strategic Directions* document provides the direction for Council's various functions over a three year term. The Environmental Action Plan 2008-2011 will sit underneath Council's Strategic Management Plan (see Figure 2). The Plan will inform Council's budget process for environmental initiatives for each financial year.

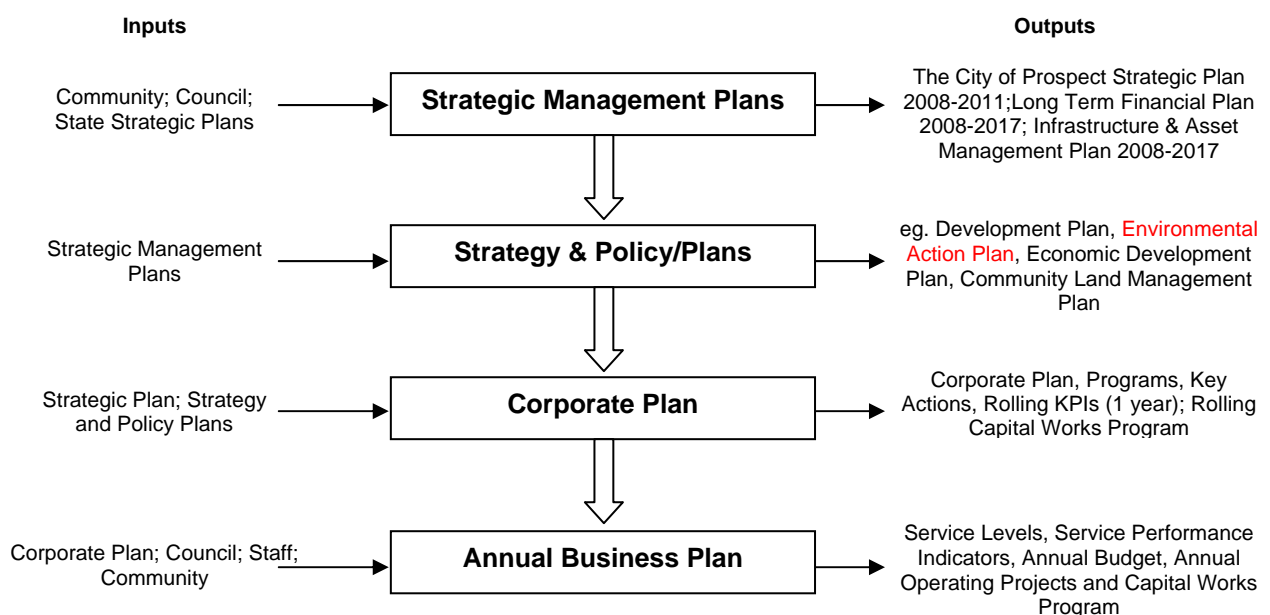


Figure 2: The City of Prospect's Strategic Management Planning Process

The Environmental Action Plan 2008-2011 has been developed with regard to various environmental plans and strategies that are in place for the State and region, and has also taken into consideration Council's other relevant plans.

Some of these plans include:

- South Australia's Strategic Plan 2007
- Tackling Climate Change: South Australia's Greenhouse Strategy 2007-2020
- South Australia's Waste Strategy 2005-2010
- A Thirst for Change: Water Proofing Adelaide 2005-2025
- South Australia's State Natural Resource Management Plan 2006
- The City of Prospect's *Strategic Plan 2008-2011*
- Council's Development Plan (consolidated 10 January 2008)
- The City of Prospect's (Draft) Local Bicycle Network Review Plan 2007

Regional Environmental Management Plan 2008-2013

The City of Prospect is a member of the Eastern Region Alliance (a group of eastern region Councils), and has been an active participant in developing the *Regional Environmental Management Plan 2008-2013*. This regional plan is the first of its kind in South Australia. It recognises the common environmental issues that urban councils need to address and that these issues are not confined to Council boundaries. The regional plan seeks collaboration between member councils for environmental management (where appropriate) and will complement the City of Prospect's own Environmental Action Plan.

Legislation

Council needs to be responsive to various environmental legislative requirements. Some of these Acts include:

Climate Change and Greenhouse Emissions Reduction Act 2007

Three key State-wide targets:

1. *To reduce greenhouse gas emissions by 60% of 1990 levels by 2050;*
2. *to increase the generation of renewable electricity to 20% of all electricity generated in the state by 2014;*
3. *and to increase the state's consumption of renewable electricity to 20% of the total by 2014.*

Development Act 1993

Environment Protection Act 1993

Local Government Act 1999

Natural Resource Management Act 2004

5 Environmental Themes and Goals

The themes, goals and actions in this plan have been prepared taking into consideration the aforementioned sustainable development principles. Five key environmental themes have been identified by Council officers, including:

- Biodiversity and Open Space;
- Energy Management;
- Waste Management;
- Water Management; and
- Governance and Leadership.

Within the next sections, background information is provided on each environmental theme and will also include the broad goals, key projects and examples of some actions that are being proposed for each theme.

This plan describes broad goals under each of the five environmental themes which will guide the projects undertaken by Council over the life of the Plan. In summary these are:

Biodiversity and Open Space: *Protect and enhance our biodiversity*

Energy Management: *Reduce the greenhouse impact of energy use within our community*

Waste Management: *Reduce the amount of waste disposed to landfill through (in order of priority) avoidance, reduction, reuse and recycling*

Water Management: *Reduce potable water use, increase rainwater capture and reuse, and improve stormwater quality*

Governance and Leadership: *Lead our community in minimising their environmental impact through good governance and leading by example*

Many of the actions proposed under each theme will help to achieve the broad goals described above. Some actions may help to inform or progress the key projects nominated under each theme.

5.1 Biodiversity and Open Space

Biodiversity (or biological diversity) is the *variety of all forms of life (plants, animals and micro-organisms), the genes they contain, and the ecosystems of which they form a part*. An ecosystem is a community of animals and plants, considered as a total unit within its physical environment.

More than 75% of Australians live in urban or semi-urban areas. As a result of urbanisation these areas have suffered the greatest losses in biodiversity. This is mainly the result of clearing and habitat loss and the fragmentation of remaining habitat. This makes it even more important to maintain what little is left and to work towards improving biodiversity in urban areas. Apart from the intrinsic value of biodiversity in urban areas there are also social, educational and aesthetic values to be considered (South Australian Urban Forest Biodiversity Program, 2000).

Maintaining and enhancing biodiversity is important for a number of reasons, including:

- Biodiversity maintains the critical ecosystem processes that support life. Healthy, functioning ecosystems are necessary to maintain and regulate the atmosphere, climate, fresh water, soil formation, cycling of nutrients and disposal of wastes.
- Biodiversity has an intrinsic value.
- There are aesthetic and cultural reasons for the maintenance of biodiversity. The community places a high value on native plants, animals and ecosystems, which contribute to a sense of cultural identity, spiritual enrichment and recreation.

Current State of Biodiversity within the City of Prospect

The City of Prospect is now a highly urbanised environment, which means that the natural resources (including biodiversity) of the region have been significantly altered. There are a number of parks in the Council area, the majority of which are primarily for recreation purposes and therefore have little in the way of remnant vegetation.

In general the biodiversity within the City of Prospect is likely to be found in three key areas, those being:

- parks and reserves in the Council area;
- roadside vegetation/streetscapes; and
- suburban backyards.

The character of urban areas depends largely on its parks and open space assets. Council is currently considering undertaking a Parks Strategy which will provide strategic direction for the management of Council's open space.

Ern Sconce Rotary Park provides an example of how the provision of open space can be combined with enhancing the local biodiversity of a region. Plants used in the park were selected in association with the South Australian Urban Forest Biodiversity Program (2001) and are all examples of native plants that grew in the area prior to European settlement.

Streetscaping

The City of Prospect has a street tree policy that states that *where a street does not have an existing avenue or stand of trees of a single species, Council will plant tall trees to create a canopy on both sides of the road where this is appropriate*. Council maintains a list of trees and a street tree planting program which outlines the types of trees that will be planted in streets across the Council area. Council has also developed The City of Prospect 21st Century Street Tree Manual to complement the regular planting program and have already planted more than 300 street trees.

While the street tree list includes some Australian species, most trees are not locally native to the area. The street tree list has selected species for a number of different reasons. For example, eucalypts are not generally used within the Council area because the tree water use and the invasive root system can result in soil cracking in the clay soils that dominate the Prospect area.

The use of native species, or species which provide appropriate habitat for insects and birds, should be encouraged, provided other requirements for street vegetation can be met.

The links between the leaf fall pattern of street trees and street sweeping also needs to be managed, such that leaf matter is collected and does not pollute the stormwater system. The nature of leaf fall will be dependant on the type of trees present, with deciduous non-native trees having extensive leaf fall during autumn and native trees having lesser leaf fall spread throughout the year. Council has recently purchased a more efficient street sweeper to address the issue of leaf fall.

In addition to the street trees, the road verge or nature strip is seen as a valuable asset. Whilst not taking responsibility for maintaining a planted verge, Council encourages residents to develop, maintain and landscape the road verge in front of their property. Where a property abuts new paving works, Council will provide lawn seed to the owner, free of charge.

Pre European Vegetation

Remnant native vegetation, together with documented information on early vegetation surveys has been used to try to determine the pre-European vegetation for the Adelaide region. This is documented in Kraehenbuehl (1996), and summarised below.

Mallee scrub communities were extensive on the northern side of the River Torrens, spreading through North Adelaide, Ovingham, Prospect, Enfield, Broadview, Medindie, Walkerville, and elevated areas of Islington, Blair Athol and Northfield (Kraehenbuehl, 1996).

Available information for the Prospect area indicates the region is likely to have been covered by a *Eucalyptus porosa* woodland. Remnant vegetation studies from the Northfield area have identified the following possible associated trees and shrubs within a *Eucalyptus porosa* woodland. It is possible that some or all of these species were also present in the Prospect area.

- Associated trees and large shrubs include *Allocasuarina verticillata* (Drooping sheoak), *Bursaria spinosa* (Christmas bush), *Dodonaea viscosa* subsp. *spatulata*

(Sticky hop bush), *Acacia pycnantha* (Golden wattle) *A. paradoxa* (Kangaroo thorn).

- Smaller plants on high clay banks include *Lomandra nana* (Small mat-rush), *L. densiflora*, *L. effusa*, *Dianella revoluta* var *revoluta*, *Pimelea micrantha*, *Atriplex semibaccata*, *Convolvulus erubescens*, *Goodenia albiflora*.
- Grasses are a feature of the area, especially stands of *Themeda triandra* (Kangaroo grass), reminiscent of what the earlier settlers saw across the plains.
- Other grass species include *Aristida behriana*, *Chloris truncata*, *Enneapogon nigricans*, *Cymbopogon ambiguus*, *Stipa flavescens*, *S. nidosa*, *S. blackii*, *S. platychaeta*, *Danthonia setacea*, *Elymus scabrus* and *Poa crassicaudex*.

Further Information

For further information on biodiversity protection and enhancement, visit the following:

Adelaide and Mount Lofty Ranges Natural Resource Management Board
www.amlrnrm.sa.gov.au

Conservation Council of South Australia
www.ccsa.asn.au

Department of Water, Land and Biodiversity Conservation, South Australian Government
www.dwlbc.sa.gov.au

Department of Environment, Water, Heritage and the Arts, Australian Government
www.environment.gov.au/biodiversity/index.html

Department for Environment and Heritage, South Australian Government
www.environment.sa.gov.au/biodiversity/bioplans.html

Natural Resource Management in South Australia, South Australian Government
www.nrm.sa.gov.au

Achievements to date

- Indigenous Flora Project – replacing irrigated turf with mulched indigenous plantings.
- Protection and salvage of remnant flora on nature strips and industrial land.
- Fauna information provided on the City of Prospect website.
- WT Smith Park and Ern Sconce Rotary Park redesign.

GOAL: Protect and enhance our biodiversity.

Numerous actions have been developed for this goal and they have been listed under either Corporate or Community to clarify the direction of Council's actions. Some actions/projects that will be investigated/implemented are listed beneath these headings:

KEY PROJECT: *Develop and Implement 'Eco Prospect' – a strategy/program for the protection, enhancement and promotion of biodiversity within the City of Prospect.*

Corporate:

ACTION: Create a strategy for the protection of remnant vegetation found on land managed by Council (including verges and reserves)

ACTION: Increase the quality and area of fauna habitat areas

ACTION: Review councils procedure regarding spraying of nature strips to minimise adverse effects on biodiversity, soil erosion, and water quality

Community:

ACTION: Promote the incorporation of fauna friendly design for private open space and school grounds

ACTION: Promote the use of locally indigenous plant species to the community, including schools

5.2 Energy Management

Types of energy use

Energy use is closely linked with the emission of greenhouse gas. Energy such as 'stationary' energy (electricity or gas) or transport energy (vehicle fuel) generally comes from carbon stored in the ground (oil and coal). By burning these fuels the carbon is released into the atmosphere as carbon dioxide. Figure 3 shows the proportion of greenhouse emissions by sector in South Australia in 2006 and demonstrates the significance of energy in South Australia's greenhouse gas emissions.

Actions for decreasing energy use and subsequent greenhouse gas emissions within the Council area have been incorporated within two sub sections under Energy Management. The first section targets the use of stationary energy (mainly electricity or gas use in buildings). The second energy section is concerned with promoting sustainable transport and reducing the impacts of transport energy (vehicle fuel).

Stationary Energy

Stationary energy is the largest contributor to greenhouse gas emissions in Australia. Stationary energy alone contributes 50% of Australia's total greenhouse gas emissions. Stationary energy includes electricity generation, emissions associated with combustion of fuel to provide energy for manufacturing and emissions from the combustion of fuel for energy use in the commercial, agricultural and residential sectors (other than off site transportation).

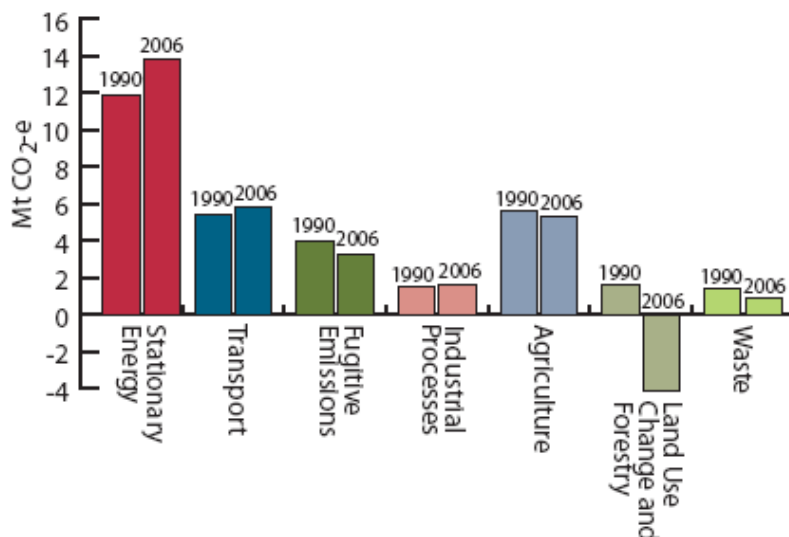


Figure 3: South Australia's Greenhouse Gas Emissions by Sector in 2006 (SOURCE: Australian Greenhouse Office 2008)

The greenhouse effect

Greenhouse gases are a natural part of the Earth's atmosphere. The gases absorb and re-radiate the warmth from the Sun, maintaining the Earth's surface temperature at a level suitable to support life. This is referred to as the 'greenhouse effect'.

Human activity, particularly burning fossil fuels (coal, oil, natural gas), agriculture and land clearance are increasing the concentrations of the greenhouse gas emissions that trap heat. This is referred to as the 'enhanced greenhouse effect' which contributes to the warming of the Earth's surface (also known as 'global warming').

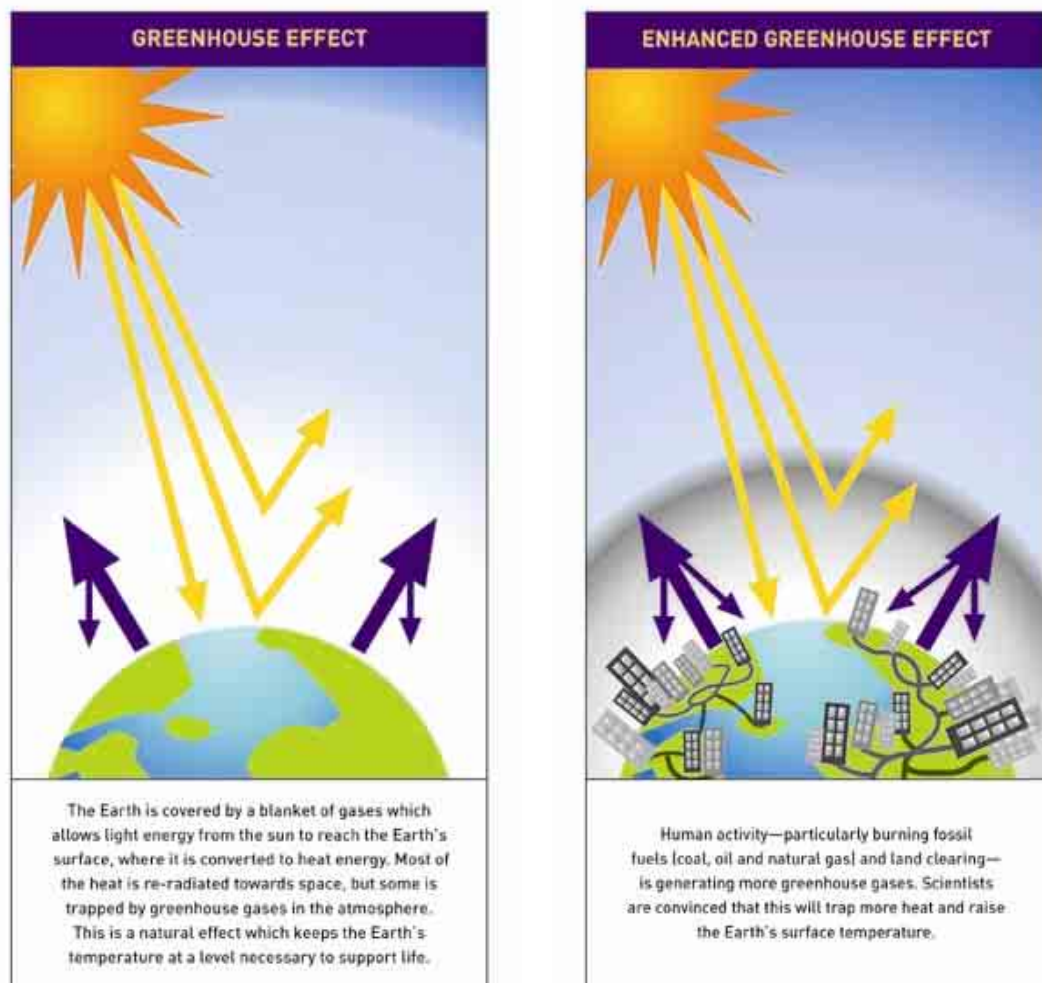


Figure 4: Greenhouse and Enhanced Greenhouse Effect (SOURCE: Department of the Environment and Water Resources, Australian Greenhouse Office, 2007)

Water vapour (H_2O) is the most abundant greenhouse gas. Its concentration is highly variable but human activities have little direct impact on its amount in the atmosphere. Human activities impact most on carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). Various artificial chemicals such as halocarbons also make a small contribution to the enhanced greenhouse effect.

Greenhouse gases (excluding water vapour) make up about 1% of the atmosphere. Although only a small component of the atmosphere they are very effective in trapping radiation. Carbon dioxide makes the biggest contribution to the enhanced greenhouse effect (about 64%) and methane the second highest contribution (about 20%). Methane however has a warming potential more than 20 times greater than carbon dioxide on a volume basis.

These gases do not remain in the atmosphere indefinitely but are subject to various chemical processes. For example, carbon dioxide is absorbed by plants as they grow, and by oceans. Areas that absorb carbon dioxide and store it as carbon are called 'carbon sinks'.

Before the industrial revolution (about 200 years ago) the levels of greenhouse gases in the atmosphere were relatively constant. With the expansion of industrial activity and increasingly efficient agriculture, more greenhouse gases are being released into the atmosphere. For example, the carbon dioxide concentration in the atmosphere is now about 30% higher than it was 200 years ago. The burning of fossil fuels (coal, oil and natural gas) and land clearing are the main causes of this increase.

Human-induced climate change presents many challenges for society and the environment. It will be important for all facets of society to reduce greenhouse gas emissions (mitigation), and also makes some adaptations to the changing climatic conditions (adaptation).

Energy use in the City of Prospect

The City of Prospect has been a participant in the ICLEI Local Governments for Sustainability, Cities for Climate Protection (CCP) Program since 2002, and in 2007 finalised progress through the 5-step Milestone Program to now participate in CCP Plus. The CCP Program has provided Council with a strategic framework to address reducing greenhouse gas emissions from both Council's operations and the community.

The City of Prospect is striving to meet the following endorsed emissions reduction goals set in 2002:

- To reduce **corporate** (Council operations) emissions by 30% from 1999/00 levels by 2010/2011
- To reduce **community** emissions by 20% from 1998 levels by 2010/2011

At the time that the reduction goals were set, a 20% reduction in greenhouse gas emissions for both sectors was supported by more than 150 local authorities and municipal organisations from more than 50 countries worldwide. The 20% reduction goal was initiated in Canada when the City of Toronto became the first city in the world to set a greenhouse gas emission reduction target which became known as the 'Toronto Target'. The City of Prospect chose to strive for a slightly higher corporate reduction along with a number of other Australian CCP Councils.

The Energy Use Reduction Hierarchy which involves (in order of priority) Avoidance, Efficiency, Alternative Energy Sources and Renewables, and Offsets, will be fundamental to achieving the Corporate goal.

Table 1 indicates the Corporate emissions that were recorded at two points in time, providing feedback to Council about the progress towards the emission reduction goals. Through this Program, Council can measure the emissions that are being produced by each sector and then target projects around the sectors where reductions in energy use and emissions can be made.

Table 2 provides a snapshot of emissions produced by our community, measured at two points in time. Information is based on ABS data.

| Category | Energy (GJ) | | Emissions (tonnes CO ₂ -e) | | Emissions (%) | |
|-------------------------|-------------|-------------|---------------------------------------|-------------|---------------|--------------|
| | 1999/00 | 2005/06 | 1999/00 | 2005/06 | 1999/00 | 2005/06 |
| <i>Buildings</i> | 1296 | 1434 | 385 | 385 | 11.6 | 6.4 |
| <i>Vehicle Fleet</i> | 2194 | 2494 | 151 | 171 | 4.5 | 2.8 |
| <i>Street Lighting</i> | 2023 | 2375 | 623 | 656 | 18.7 | 10.9 |
| <i>Employee Commute</i> | N/A | 578 | N/A | 40 | N/A | 0.7 |
| <i>Water/Sewage</i> | N/A | N/A | N/A | N/A | N/A | N/A |
| <i>Waste</i> | N/A | N/A | 2173 | 4768 | 65.2 | 79.2 |
| Total | 5513 | 6881 | 3332 | 6020 | 100.0 | 100.0 |

Table 1: Comparison of Council's (Corporate) Greenhouse Gas Emissions from base year inventory and re-inventory (Source: Cities for Climate Protection Milestone 5 Report, City of Prospect)

| Sector | Energy (GJ) | | Emissions (tonnes CO ₂ -e) | |
|-----------------------|------------------|------------------|---------------------------------------|----------------|
| | 1998 | 2005 | 1998 | 2005 |
| <i>Residential</i> | 284700 | 304488 | 58510 | 58612 |
| <i>Commercial</i> | 183826 | 163826 | 39083 | 31535 |
| <i>Industrial</i> | 116455 | 358723 | 11463 | 37545 |
| <i>Transportation</i> | 657026 | 737564 | 44574 | 50205 |
| <i>Waste</i> | N/A | N/A | 38193 | 9333 |
| <i>Other</i> | N/A | N/A | N/A | N/A |
| Total | 1,242,007 | 1,564,601 | 191,824 | 187,229 |

Table 2: Comparison of the City of Prospect Community Greenhouse Gas Emissions from base year inventory and re-inventory (Source: Cities for Climate Protection Milestone 5 Report, City of Prospect)

Further Information

For further information on global warming and climate change, visit the following:

Bureau of Meteorology, Australian Government
www.bom.gov.au

Cities for Climate Protection, International Council for Local Environmental Initiatives (ICLEI)

www.iclei.org/index.php?id=2291

Climate Change in Australia, developed by CSIRO and the Bureau of Meteorology in partnership with the Australian Greenhouse Office through the Australian Climate Change Science Program

www.climatechangeinaustralia.gov.au

Tackling Climate Change in South Australia, South Australian Government

www.climatechange.sa.gov.au

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

www.csiro.gov.au

Intergovernmental Panel on Climate Change, World Meteorological Organisation (WMO) and United Nations Environment Programme (UNEP)

www.ipcc.ch

Achievements to date

- Participants in the ICLEI – Local Governments for Sustainability – Cities for Climate Protection Plus program;
- 20% of all electricity purchased by Council is from accredited green power sources;
- Solar hot water system installed at the Civic Centre;
- Lighting retrofit in the Library, Gallery and Civic Centre to improve energy efficiency; and
- Air-conditioning upgrades at the Thomas Street Centre and as part of the Civic Centre rebuild.

Transport Energy

Sustainable Transport

Sustainable transport is used to describe all forms of transport which minimise emissions of carbon dioxide (CO₂). Sustainable transport as an environmental theme under Council's *Environmental Action Plan 2008-2011* therefore includes actions associated with public transport, car sharing, walking and cycling as well as investigating implementation of new technologies including electric and hybrid cars, and alternative fuels.

Transport in the City of Prospect

Information from the 2006 Census indicates that there has been an increase in the number of residents within the City of Prospect catching public transport, walking and cycling to work compared with results from the 2001 Census. There is still a large proportion of residents that rely heavily on cars as the main mode of travel to work, with almost 65% as a driver or passenger, despite the Council area's proximity to the Adelaide CBD.

The City of Prospect created a comprehensive Bike Plan for the City in 2004. A review of this Plan in 2007 was undertaken to identify and rationalise a bicycle network which will help to incorporate works that will improve cycling provisions and infrastructure throughout the City. These strategic plans may help Council work with various agencies on initiatives to encourage cycling within the Council area.

Council offers a locally based public transport option for travel within the Council area for some residents which includes door to door transport to local clubs, activities and the library.

Greenhouse gas emissions

In 2004 the Australian transport sector accounted for 14% of Australia's total greenhouse gas emissions. Of this figure about 89% of emissions came from road transport, including cars, trucks and buses (Australian Greenhouse Office, 2007). Figure 5 shows the different components that contribute to transport emissions.

National greenhouse gas emissions from the transport sector have increased by 28 per cent between 1990 and 2004. Latest projections indicate that emissions from the transport sector will rise by 40 per cent between 1990 and 2010 (Australian Greenhouse Office, 2007).

An issues report released as part of South Australia's Greenhouse Strategy about the transport and planning sector (Government of South Australia, 2005) suggests three broad ways forward that should be combined to reduce the greenhouse impact of transport. It is considered that Council can play a role in the advocacy for the uptake of these within the City of Prospect. The suggested ways forward are:

- Adopt as rapidly as possible technologies that will reduce greenhouse gas emissions from motorised vehicles;

- Reduce the need for emissions-intensive transport; and
- Move towards more efficient forms of motorised travel.

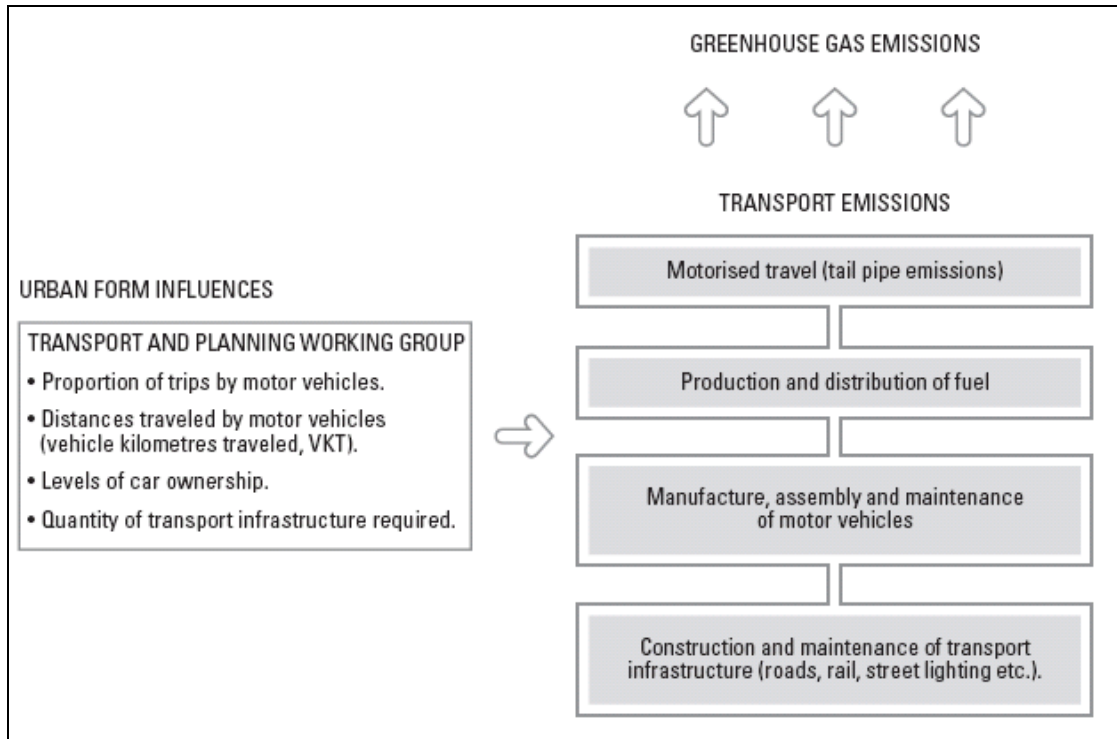


Figure 5: *Transport related greenhouse gas causes* (Source Government of South Australia 2005)

Air quality and noise

Increased road use and congestion can lead to a reduction in air quality and an increase in background noise, particularly along frequently used routes. Reduced air quality has also been associated with respiratory illnesses such as asthma.

Many studies undertaken overseas have shown a link between air pollutants produced in combustion engines (such as motor vehicles) and increases in premature deaths and hospital admissions for people with existing heart and lung disease (Victorian EPA, 2001). Air pollutants include particles (PM10 and PM2.5), ozone (O₃), nitrogen dioxide (NO₂) and carbon monoxide (CO). Sensitive groups within the population including the elderly, people with existing illnesses, asthmatics and children have been shown to be most affected by air pollutants. The findings of these studies were confirmed in a study undertaken by the Victorian EPA (2001).

In addition to greenhouse gas reduction, the reduced use of motor vehicles has environmental benefits in terms of air quality improvements and noise reduction.

Health and fitness

Most non-car based forms of transport have positive health benefits for the individual. Walking and cycling can provide gentle exercise that promotes fitness. Health experts suggest that just 30 minutes of moderate intensity physical activity each day is enough to maintain good health. These 30 minutes can be broken up into short 10 minute bursts (Queensland Transport, 2007).

Further Information

For further information on sustainable transport, visit the following:

TravelSmart, South Australia

www.transport.sa.gov.au/environment/travelsmartsa/index.asp

Climate Change Resources – Transport, Department of Climate Change

www.greenhouse.gov.au/education/tips/transport.html

ICLEI, Cities for Climate Protection – Sustainable Transport

www3.iclei.org/ccp-au/tdm/index.html

Achievements to Date

- The City of Prospect Bike Plan (2004) and Local Bicycle Network Review (2007).
- Installation of nine bike rails across the City (2008)
- Production of two cycling maps specifically for the City of Prospect (2008)
- Community bus service (accessing shops, library and community facilities – applicable for some residents).
- Consideration of cyclist needs in traffic proposals (such as 250 Churchill Road PAR and proposed closure of Cotton Street).

GOAL: Reduce the greenhouse impact of energy use within our community.

Numerous actions have been developed for this goal and they have been listed under either Corporate or Community to clarify the direction of Council's actions. Some actions/projects that will be investigated/implemented are listed beneath these headings:

KEY PROJECT: *Investigate (and implement where feasible) options for localised, renewable energy generation to supply 'green' electricity to at least one Council building, possibly all (e.g. installing photovoltaic cells, solar hot water systems, biodiesel generators for power supply etc.)*

Corporate:

ACTION: Undertake an energy audit of all Council buildings and implement recommendations where appropriate.

ACTION: Undertake investigations into options for replacing existing public lighting with more sustainable alternatives (and implement where feasible).

ACTION: Review, and update if necessary, contracts and policies regarding vehicle size, efficiency and purchasing

Community:

ACTION: Coordinate community engagement programs that encourage improvements in local buildings' energy efficiency.

ACTION: Engage with schools to encourage participation in non-car based travel to and from school eg "walking school bus" program

5.3 Waste Management

Waste Management

Waste management involves the collection, storage, transport, treatment, disposal and minimisation of refuse or by-products produced by the community and industry. Minimising waste benefits the environment through reduced energy consumption and pollution, and also saves money by reducing disposal costs of waste going to landfill.

The waste hierarchy (Figure 6) is the accepted philosophy for managing waste and is the foundation upon which *South Australia's Waste Strategy 2005-2010* has been developed.

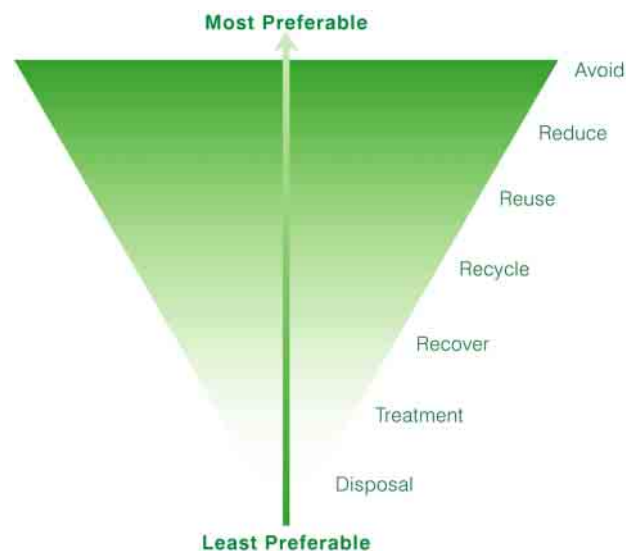


Figure 6: *Waste hierarchy* (Source: Zero Waste SA)

South Australia's long-term goal is to achieve zero waste through maximising waste avoidance and waste reduction at the top of the hierarchy. The *Waste Strategy* recognises that there continues to be significant amounts of potentially re-usable, recyclable, recoverable and compostable materials disposed of to landfill in South Australia.

South Australia's Waste Strategy 2005-2010 sets targets for the reduction of waste to landfill and states that these targets can be achieved through:

- *Fostering sustainable behaviour through innovative approaches to information provision, education and awareness programs and activities.*
- *Promoting waste avoidance and reduction with householders and Councils.*
- *Establishing baseline data and monitoring trends and progress.*

Recycling is only one way to minimise the impacts of waste on the environment. The Waste Strategy recognises the need to shift the emphasis from recycling towards a culture where waste reduction and avoidance are an accepted lifestyle choice and the usual way of doing business for South Australians. This calls for a change in attitudes and behaviour and requires a shift from strategies with a recycling focus to one that

emphasises education and feedback to the community about choices and consumption.

Waste Management in the City of Prospect

The current waste collection system began operation in July 2000 and provides regular services for the collection of domestic waste, recyclables, green waste and hard waste to both residential properties and some commercial properties. Council's contractor collects these wastes on behalf of the City of Prospect.

Council is a member to a regional local government subsidiary known as Wastecare SA. The participating councils (The City of Prospect, Charles Sturt, Walkerville, Norwood Payneham & St Peters, Adelaide City Council, and Campbelltown) collectively own a transfer facility located on leased land owned by the Adelaide City Council. The facility is operated under contract by Transpacific Industries who sort waste, divert recyclable material and transport putrescible waste to the Inkerman landfill.

Council's contractor collects recyclable materials, such as paper, plastic containers and glass bottles simultaneously with domestic waste via the split bin system. The use of the split bin system means that only one vehicle is required for the collection of both recyclable and non-recyclable domestic waste. Separation is maintained within the truck once collected.

The waste is initially transported to the Adelaide Waste and Recycling Centre, at North Plympton, where the non-recyclable domestic waste is further transported for disposal at the Inkerman landfill via the Wastecare SA transfer facility at Wingfield. The recyclable material is sorted and prepared for sale.

Council also provides a service for the collection of wastes from public rubbish bins and from Council streets and public areas.

Council's contractor provides a fortnightly green organic waste collection service on behalf of the Council. The green organic material collected through this service is transported to a green waste processor where it is processed into mulch and organic fertiliser.

The Council provides each domestic property with three at-call annual hard waste collections. Residents are encouraged to dispose of hazardous household waste at the Environment Protection Agency's Hazardous Household Waste Depot at Dry Creek.

In addition to the domestic services provided, the Council also provides collection of domestic waste, recycling and green waste services for commercial properties within the Council area that have a domestic collection need eg staff kitchen. Other commercial, industrial and building companies working within the city organise their own waste collection services through private contractors.

The City of Prospect will be undertaking a waste services review leading up to the expiration of the current waste contract for kerbside collections. This is considered a major project for Council and will be an important issue for the community. Consultation with the community will be critical in deciding on the waste collection system that Council will move forward with.

Further Information

For further information on waste management, visit the following:

Zero Waste SA, South Australian Government

www.zerowaste.sa.gov.au

Environment Protection Authority, South Australian Government

www.epa.sa.gov.au/waste.html

Achievements to date

- Education and promotional materials for the community about waste management.
- Council-based and community waste audit undertaken (2007).
- Fortnightly kerbside green waste collection provided to residents.

GOAL: Reduce the amount of waste disposed to landfill through (in order of priority) avoidance, reduction, reuse and recycling.

Numerous actions have been developed for this goal and they have been listed under either Corporate or Community to clarify the direction of Council's actions. Some actions/projects that will be investigated/implemented are listed beneath these headings:

KEY PROJECT: *Investigate and implement a kerbside waste collection service that maximises cost effective and environmental outcomes.*

Corporate:

ACTION: Investigate (and implement as appropriate) measures to minimise waste across all Council operations including administration and on-ground works

ACTION: Create guidelines for waste management at Council events and implement

ACTION: Lobby for an extension of hours for the EPA hazardous waste disposal service at Dry Creek

Community:

ACTION: Promote the best practice use of the kerbside waste collection system to both residential and non-residential properties

ACTION: Continue to promote and encourage the use of compost bins and worm farms

5.4 Water Management

Water Management

Water is a big issue in Australia and particularly South Australia at present. It is becoming increasingly clear that careful management of this precious resource is needed.

Water management in South Australia is covered by the *Natural Resources Management Act 2004* and the *Water Resources Act 1997*. The Natural Resources Management Act has substantially repealed the Water Resources Act and with further amendments is expected to repeal it completely (in practical terms the City of Prospect only needs to consider the Natural Resource Management Act).

The City of Prospect is located in the Adelaide Mount Lofty Ranges Natural Resource Management Board (AMLRNRMB) region. The AMLRNRMB will produce a regional Natural Resource Management Plan for the area which will include policies relating to water management.

The South Australian Government has produced a strategy for the conservation and development of Adelaide's water resources, *Water Proofing Adelaide*. Within this strategy a number of actions are proposed by the State Government which have advantages for the Council.

Water Supply

The Prospect Council area is supplied with potable (drinking quality) water via the SA Water reticulated water supply system. This supply provides Adelaide's one million residents with water through an extensive reticulation system connected to six water filtration plants. The reticulation system comprises 110 tanks, forty pumping stations and a complex network of more than 8,000 kilometres of water mains varying in size from 2100 mm to 75 mm.

Water is sourced from the Adelaide Hills and via large pipelines from the River Murray. In an average year approximately 60% comes from the Adelaide Hills and 40% from the River Murray (*Water Proofing Adelaide*, 2004). In dry years, much more water is taken from the River Murray. SA Water operates several reservoirs and water distribution systems. The Prospect area is connected to the Hope Valley Reservoir.

Some residences within the Council area are also likely to source water from local collection of roof runoff to rainwater tanks. At this stage the number of rainwater tanks in the Council area is unknown. Council has provided incentives for residents to install rainwater tanks that are plumbed into the home.

The demand for water in Adelaide is approaching the available supply of mains water as shown in Figure 7.

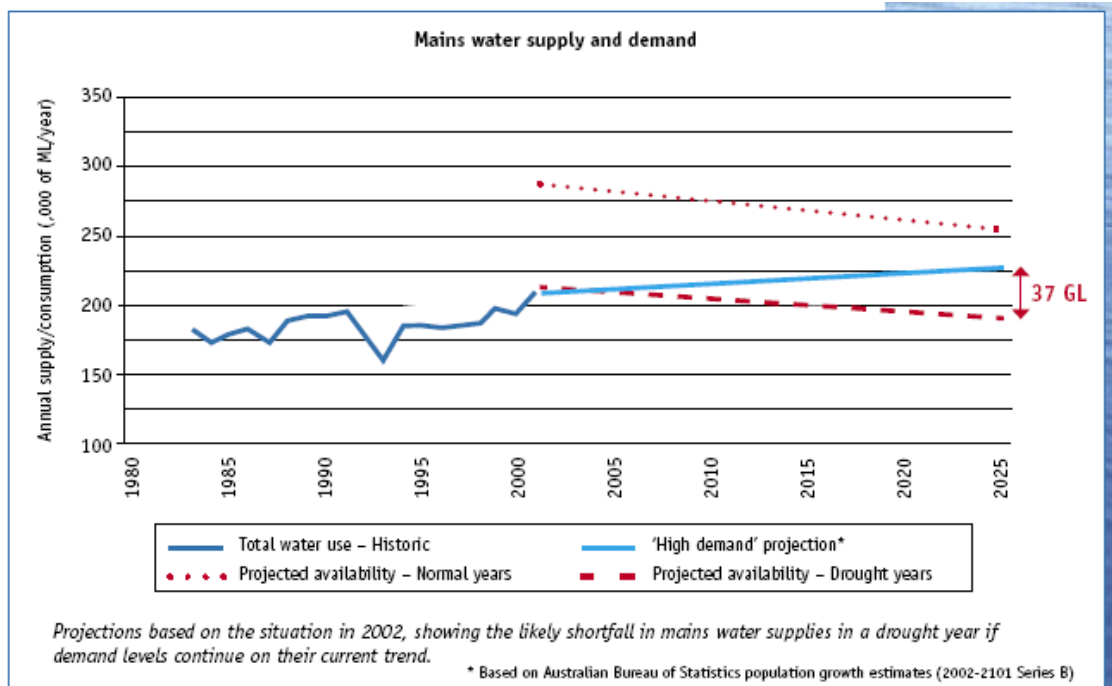


Figure 7: Current Water Use and Projected Availability (Source: Water Proofing Adelaide 2006)

Stormwater

Stormwater systems in the metropolitan area have been developed to reduce flooding of urban areas. Excess stormwater runoff from properties discharges to urban streets; therefore roads form the basis of the stormwater system. Stormwater originates from runoff from roofs and gutters, driveways and roads.

Stormwater Drainage

Stormwater in the Council area predominantly drains through underground pipes or culverts and to the Hindmarsh Enfield Prospect (HEP) Channel. This channel drains to the Port River via the Barker Inlet wetlands.

A small proportion of stormwater, in the southern part of the Council area drains directly to the River Torrens. This is predominantly along the lower part of Main North Road, and the Collinswood and Medindie Gardens area.

Stormwater Quality

There has not been specific monitoring of stormwater within the Prospect area. Poor stormwater quality will have impacts on the receiving environment, which in the case of Prospect is the Barker Inlet. Different parameters will have different impacts, for example excess nutrients can result in excessive algal growth, increased levels of faecal coliforms can pose health risks, and high levels of heavy metals can have toxic effects on aquatic species.

Council has previously been involved with a Stormwater Compliance Program which was funded through Adelaide Mount Lofty Ranges Natural Management Board. The

project funded a project officer to work with industry in the Council area to improve practices and reduce impacts on stormwater within the Council area. As part of the role the project officer visited all industries in the Council area and found key factors contributing to stormwater pollution in the area to include:

- Vehicle washing wastewater going into the stormwater system;
- Other waste or wastewater going into stormwater system;
- Inappropriate oil disposal/surface oil contamination;
- Unbundled/unroofed chemicals/batteries/oil;
- Washbay unbundled/unroofed;
- No trade waste permit when required; and
- Poor management of construction sites.

There is limited information available regarding the impact of the residential sector on stormwater quality.

The Council documents complaints received in relation to stormwater. Generally a complaint would be lodged when a member of the community observes an inappropriate discharge. Table 3 summarises stormwater incidents dealt with by Council.

| Incident type | 2005 | 2006 | | 2007 to date | TOTAL | |
|---------------------------|------------|-----------|------------|--------------|------------|--------------|
| | July - Dec | Jan - Jun | July - Dec | Jan - March | NUMBER | % |
| domestic | 5 | 3 | 9 | 4 | 21 | 9.1 |
| auto | 1 | 3 | 3 | 2 | 9 | 3.9 |
| other commercial | 4 | 7 | 10 | 5 | 26 | 11.3 |
| building and construction | 20 | 58 | 55 | 12 | 145 | 63.0 |
| infrastructure | 4 | 15 | 7 | 3 | 29 | 12.6 |
| TOTAL | 34 | 86 | 84 | 26 | 230 | 100.0 |

Table 3: Stormwater issues addressed by Council July 2005 – March 2007 (Source: Council complaints database)

The results show that more than half (63%) of all complaints were associated with building and construction.

Current water use in the City of Prospect

The City of Prospect has been a participant in the ICLEI Local Governments for Sustainability, Water Campaign since April 2006, and in 2008 finalised progress through Milestone 1 of the 5 step Milestone Program. The ICLEI Water Campaign provides Council with a strategic framework to address water conservation and water quality issues for both Council's operations and the community.

The City of Prospect is striving to meet the following endorsed **water conservation** goals set in 2008:

- To reduce **corporate** (Council operations) water consumption by 30% from 2004/05 levels by 2010/2011 and achieve a further 20% reduction by 2020.
- To reduce **community** water consumption by 20% from 2004/05 levels by 2020.

The Corporate water conservation goal was chosen to align with other Councils of similar size and landscape. It was considered that Council should aim for this goal by 2010/11 to align with the timeframe set out in Council's Strategic Plan.

The Community water conservation goal was chosen to align with other Councils, acknowledging that Council does not have direct control over community water use behaviour.

Water use within the City of Prospect for 2004/2005 and 2005/2006 is shown in Tables 4(a) and 4(b). Domestic water use is the highest water using activity that occurs within the City of Prospect. This is unsurprising given that residential land use is by far the most common land use type in the Council area. This suggests that water conservation initiatives should include material targeted at the residential sector. The amount of water used annually for the other sectors is also significant and these should not be overlooked when establishing water conservation measures.

Mains water used by Council is principally for watering outdoor vegetation. This suggests that significant gains in water reduction can be made through reducing the demand for mains water in these areas. This may be achieved by a combination of landscaping and alternative water supply measures.

| Facility type | 2004/05 Consumption (kL) | 2005/06 Consumption (kL) | Percentage of Total (2005/06) |
|--------------------------------|---|---|--|
| Administration Buildings | 560 | 1,012 | 2% |
| Child Care Centres | 611 | 653 | 1% |
| Depots | 1,056 | 1,053 | 2% |
| Facilities and Toilets | 103 | 94 | 0% |
| Function and Community Centres | 2,072 | 1,889 | 3% |
| Gardens and Planter Boxes | 2,062 | 2,428 | 4% |
| Open Space | 38,535 | 30,715 | 46% |
| Playing Fields | 30,716 | 28,345 | 43% |
| TOTAL | 75,715 | 66,189 | 100% |

Table 4(a): Council's Water Consumption (mains), City of Prospect, 2004/2005 and 2005/2006

| Community Usage | 2004/05 Consumption (kL) | 2005/06 Consumption (kL) | Percentage of Total (2005/06) |
|---|---|---|--|
| Residential (including units, homes, flats, residential institutions and residential hotels/motels) | 1,804,239 | 1,859,962 | 88% |
| Residential (per capita) | 98 (pop ⁿ . based on 2001 Census) | 97 (pop ⁿ . based on 2006 Census) | |
| Commercial + Industrial | 95,104 | 97,815 | 5% |
| Other non-residential (vacant land, public utilities, recreation) | 65,332 | 134,904 | 7% |
| TOTAL | 2,064,675 | 2,092,681 | 100% |

Table 4(b): Water Consumption (mains) by Community Sector, Prospect 2004/2005 and 2005/2006

The City of Prospect is striving to meet the following endorsed **water quality** goals set in 2008:

- To achieve 60 points from the Water Campaign™ water quality action cards (**corporate**) from 2005/06 by 2010/11 and a further 20 points by 2020.
- To achieve 50 points from the Water Campaign™ water quality action cards (**community**) from 2005/06 by 2020.

Through the ICLEI Water Campaign™, the City of Prospect determined water quality priority areas to guide projects for both Council and the community. This was determined through a gap analysis which revealed what Council was doing well and the areas in which Council could improve upon. The recommended areas for future work were approved by Council's Chief Executive Officer.

- **Corporate** Water Quality Priority Areas:
 - Erosion and Sediment Control
 - Gross Litter and Pollution Management
 - Nutrient Management
- **Community** Water Quality Priority Areas:
 - Erosion and Sediment Control
 - Gross Litter and Pollution Management
 - Herbicide and Pesticide Management

Council will undertake water quality actions that will contribute towards meeting the water quality goals described above. It was considered during the development of the Corporate water quality goals that Council should aim high because of the work that Council has already undertaken in the water quality area. The community goal aligns with other councils.

Further Information

For further information on water management, visit the following:

Department of Water, Land and Biodiversity Conservation
www.dwlbc.sa.gov.au

Environment Protection Authority
www.epa.sa.gov.au/water_quality.html

ICLEI Water Campaign
www.iclei.org/index.php?id=water_home

SA Water, South Australian Government
www.sawater.com.au/sawater

Water Matters, South Australian Government
www.water.sa.gov.au/#

Achievements to date

- Prospect Oval Water Conservation Project
- Prospect Water Efficiency Incentive Scheme
- All Council irrigated parks fitted with drip irrigation systems
- Stormwater Protection and Compliance Program

GOAL: Reduce potable water use, increase rainwater capture and reuse, and improve stormwater quality.

Numerous actions have been developed for this goal and they have been listed under either Corporate or Community to clarify the direction of Council's actions. Some actions/projects that will be investigated/implemented are listed beneath these headings:

KEY PROJECT: *Investigate potential for (and implement where feasible) aquifer storage and recovery (ASR) of stormwater for the Council area.*

Corporate:

ACTION: Develop planting guidelines that incorporate plant species with low water requirements (e.g. natives, low water requirement turf, artificial turf) into all park landscape plans as plans are revised.

ACTION: Progress through the ICLEI Water Campaign

ACTION: Install rainwater tanks to collect roof runoff from all council buildings (including toilet blocks) where space allows and use captured water in landscaping and for toilet flushing.

Community:

ACTION: Provide information for residents on reducing water use in home gardens (Strategies may include irrigation techniques and equipment, low water using plant species, garden layout (plants with similar water requirements planted together), mulching)

ACTION: Continue the Prospect Water Efficiency Incentive Scheme for the community

5.5 Governance and Leadership

The City of Prospect wants to ensure 'that our residents are served by a Council which is forward looking and innovative'. - *The City of Prospect Annual Report 2005/2006*, p 27.

Council has the opportunity to demonstrate good environmental performance and encourage business and community to also be involved.

While all of Council's operations fall within the area of governance there are five key areas of governance that are particularly relevant to managing the environment:

- Policies;
- Procedures;
- Programs;
- People; and
- Partnerships.

Each of these areas of governance are discussed below.

Policies: Legislative function

The Elected Members of the City of Prospect are responsible for making policies and bylaws to govern specific activities within the Council area. These are the rules that Council makes which all members of the Prospect community abide by. The Council can affect change by creating rules (where it has the jurisdiction) to require or prohibit certain behaviours.

Procedures: Internal policies, procedures, monitoring and review

Council has a series of internal policies and procedures which guides how Council undertakes the day to day running of the Council area. The procedures include topics such as what Council will consider when looking to purchase materials or enter into contracts; how performance against targets are measured; and the Community Engagement Policy. It is through reviewing the procedures used daily that Council can reduce the impact of its own operations on the environment.

Programs: Specific actions

Council's Programs include projects/actions undertaken by Council staff. Many of the actions contained within the Environmental Action Plan would be considered as Programs.

People and Partnerships: Engagement and accountability

People involved in the day to day operations of Council retain significant corporate knowledge of the tasks Council is undertaking and has completed. By maintaining a steady workforce, a continuity of work effort and retention of corporate knowledge is achieved.

There are many environmental benefits by partnering with government (all levels), business and community. By working collaboratively, much more can be achieved than many individual efforts. An important part of this plan is working with various sectors of the community, with the goal to improve environmental performance.

Partnering with Local, State and Federal Government for specific projects can also result in additional funding for projects. Partnering with the community is also important. Council can help to provide resources and information to the community to encourage local action for the environment. This may involve funding community environment initiatives or providing in-kind support.

GOAL: Lead our community in minimising their environmental impact through good governance and leading by example.

Numerous actions have been developed for this goal and they have been listed under either Corporate or Community to clarify the direction of Council's actions. Some actions/projects that will be investigated/implemented are listed beneath these headings:

KEY PROJECT: *Implement the Council's Environmental Action Plan*

Corporate:

ACTION: Establish an internal referral process where significant developments are reviewed by an environmental officer or an environmental planner

ACTION: Participate in regional or collaborative environmental programs (where appropriate)

ACTION: Incorporate at least one environmental article into each issue of The Creative Community

Community:

ACTION: Continue biennial Community Environmental Grants

ACTION: Respond to environmental enquiries from the public and wider community

6 Actions

The Environmental Action Plan sets out actions for Council to undertake in order to achieve the numerous goals. This internal list of actions has been created to provide Council with a forward plan to undertake environmental projects and programs.

Each action to be undertaken in the 2008/09 financial year includes information on indicative budgets and potential partners. Actions for subsequent years have been identified, however these are not expanded on in as much detail because it is difficult to forecast environmental issues/priorities too far into the future.

Resourcing

The implementation of the identified actions will be very dependent on the resources available. This applies specifically to the availability of Environmental Project Officers to guide, direct and undertake the actions. The human resource capacity will be addressed by Council during the life of the Environmental Action Plan.

Overview of Goals and Key Projects

Council will pursue five key projects across the life of the Environmental Action Plan to address the broad environmental goals under each theme. In summary these are as follows:

Biodiversity and Open Space:

Goal: Protect and enhance our biodiversity

Key Project - Develop and Implement 'Eco Prospect' – a strategy/program for the protection, enhancement and promotion of biodiversity within the City of Prospect;

Energy Management:

Goal: Reduce the greenhouse impact of energy use within our community

Key Project - Investigate (and implement where feasible) options for localised, renewable energy generation to supply 'green' electricity to at least one Council building, possibly all (e.g. installing photovoltaic cells, solar hot water systems, biodiesel generators for power supply etc);

Waste Management:

Goal: Reduce the amount of waste disposed to landfill through (in order of priority) avoidance, reduction, reuse, and recycling

Key Project - *Investigate and implement a kerbside waste collection service that maximises cost effective environmental outcomes;*

Water Management:

Goal: Reduce potable water use, increase rainwater capture and reuse, and improve stormwater quality

Key Project - *Investigate potential for (and implement where feasible) aquifer storage and recovery (ASR) of stormwater for the Council area;*

Governance and Leadership:

Goal: Lead our community in minimising their environmental impact through good governance and leading by example

Key Project - *Implement the Council's Environmental Action Plan.*

7 References

AusAID (2000) *'Good Governance: guiding principles for implementation'* Commonwealth of Australia, Canberra.

Australian Greenhouse Office (2006) *'National Greenhouse Gas Inventory 2004'* accessed online <http://www.greenhouse.gov.au/inventory/2004/index.html> viewed 22 March 2007.

Australian Greenhouse Office (2007) *'Sustainable Transport'* accessed online <http://www.greenhouse.gov.au/transport/index.html> viewed 22 March 2007.

Australian Greenhouse Office (2008) *'State and Territory Greenhouse Gas Inventories 2006'* viewed 29 July 2008.

<http://www.greenhouse.gov.au/inventory/stateinv/pubs/states2006.pdf>

Cities for Climate Protection TM Resource Folder. Cities for Climate Protection TM Australia, ICLEI

Department of the Environment, Water, Heritage and the Arts (1992) *National Strategy for Ecologically Sustainable Development*, Australian Government. Accessed online

<http://www.environment.gov.au/esd/national/nsesd/strategy/intro.html> - WIESD

viewed March 2008

EPA Victoria (2001) *'Ambient Air Pollution and Daily Hospital Admissions in Melbourne 1994 – 1997'* EPA Victoria, Melbourne.

Government of South Australia (2005) *'Transport and Planning issues paper' Tackling Climate Change: South Australia's Greenhouse Strategy-*

Kraehenbuehl, D. (1996). *'Pre-European Vegetation of Adelaide: A Survey from the Gawler River to Hallett Cove'*

National Institute for Governance, (2006) *'Why are we here'* accessed online http://governance.canberra.edu.au/the_institute.html viewed 29 January 2007.

Prospect, City of (2006) *'Annual Report 2005/2006'*, The City of Prospect.

Queensland Transport (2007) *'Benefits (of cycling)'* accessed online http://www.transport.qld.gov.au/Home/General_information/Cycling/Benefits/ viewed 22 March 2007.

The City of Prospect (2008) *Draft Strategic Directions 2008-2011*, The City of Prospect

The City of Prospect (2004) *'Strategic Directions 2004 – 2007'* The City of Prospect.

Water Proofing Adelaide (2004) *'Exploring the issues – a discussion paper'*, Government of South Australia, Adelaide.

