

October 2006



**Melbourne 2006**  
**XVIII Commonwealth Games**  
**Environment Report Card**  
WaterWise  
Carbon Neutral  
Low Waste





# Melbourne 2006 XVIII Commonwealth Games Environment Report Card Contents

Foreword	3
Commonwealth Games Environment Report Card Verification audit report	4
1. Victorian Government's Commitment to Environmental Sustainability	6
2. Melbourne 2006 Commonwealth Games	7
3. Key Players	8
4. Environment Report Card	10
5. Community Involvement	11
6. Communications	11
7. Key Objectives in Practice	12
8. Games Environmental Outcomes at a glance	13
9. Commonwealth Games Environment Initiatives	28
WaterWise	29
Carbon Neutral	34
Low Waste	46
Games Systems and Processes	56
Karak	62
Education and Training	63
9. Lasting Benefits for the Environment	68
10. Key Contacts	70





“The Victorian Government is committed to using the achievements of the Games to build environmental sustainability principles and practices into all major events held in this State.”

Justin Madden, Minister for Commonwealth Games

## Foreword



The XVIII Commonwealth Games have left us with many wonderful memories of two special weeks in March 2006, when Victoria welcomed the world to the biggest sporting and cultural event this State has ever staged.

The success of that event is the result of many years of detailed planning and sheer hard work by many dedicated people.

As detailed in the *Games Environment Framework* (2002), the Government made a commitment to deliver an environmentally sound, economically viable and socially responsible event.

Planning and management of the Games was influenced by a goal to deliver improved environmental performance and reporting to the community.

This *Environment Report Card* documents the environmental achievements of that world-class event – achievements made possible through detailed planning involving partnerships with many environment stakeholders.

The Games Environment Program is one of the many aspects of the delivery of the Games for which we can all be proud. It leaves a comprehensive blueprint for the planning and delivery of future major events that will continue to put Melbourne and Victoria on the international stage.



**The Hon. Justin Madden, MP  
Minister for Commonwealth Games**



*Our Future* (2005), which directs government, businesses and communities to build environmental considerations into the way we work and live.

It is imperative that we now continue what we've begun – to use the achievements of the Games to drive initiatives that combat our key environmental challenges: land health and productivity, stressed water resources, threatened biodiversity, a changing climate, increasing waste and population and urban growth.

The Victorian Government is committed to using the achievements of the Games to build environmental sustainability principles and practices into all major events held in this State – to be a world leader in green events.



**The Hon. John Thwaites MP  
Minister for Environment  
Minister for Water**

# Commonwealth Games Environment Report Card Verification audit report



The Office of the Commonwealth Games Coordination (OCGC) engaged the Commissioner for Environmental Sustainability to undertake a verification of the *Environment Report Card*.

The Commissioner's Office was established under the *Commissioner for Environmental Sustainability Act 2003*. Under this Act, the Commissioner's objectives include reporting on matters relating to the condition of the natural environment of Victoria, and encouraging sound environmental practices and procedures to be adopted by the Government of Victoria and local government. The Commissioner's statutory functions include strategic audits of departmental implementation of environmental management systems, reporting on the State of Victoria's environment and auditing public education programs that relate to ecologically sustainable development.

## Scope

The scope of the verification audit was to review the accuracy of the ratings in the final report card and to ensure that the OCGC has provided sufficient documented evidence to support those ratings. Also within the Commissioner's brief was analysis of the environmental sustainability legacies of the environmental initiatives undertaken for the Games.

## Verification approach

The verification audit consisted of document review, analysis of data and site visits as appropriate. Information evaluated varied for each initiative; however, the following were reviewed for all of the activities outlined in the *Environment Report Card*:

- OCGC summaries
- OCGC file documents
- Any other supporting documentation.

In undertaking the report, the Commissioner's Office requested additional information regarding some activities. The OCGC then provided the information sought.

## Completeness and accuracy of reported information

The information supporting the ratings was found to be materially complete and accurate.

The ratings therefore represent a true reflection of the achievement of the initiatives in the *Environment Report Card* using the measures described under the heading 'how will we know if we've achieved our aims?'

## Key achievements

The success of the Games and many of the environmental activities was enhanced by the partnership approach between departments, agencies, local government and community groups.

The following represent significant achievements:

- accounting for the carbon impacts of transport to and from the Games (including road, air and public transport impacts) to make the Games 'carbon neutral' – setting a new benchmark for carbon accounting associated with major events;
- an average of 75% of people travelled to the Games by public transport – train, tram and bus services were used by 150,000 spectators a day;
- the construction and demolition activities at the Melbourne Cricket Ground, Melbourne Sports and Aquatic Centre and the Commonwealth Games Athletes' Village diverted an average of 89% of waste from landfill;
- the construction of the Royal Park Wetlands has resulted in water quality, amenity and biodiversity benefits;
- at least one of the major construction companies involved in Games infrastructure projects has now incorporated waste minimisation planning into their projects – Grocon, the company that rebuilt the MCG – is now using the same techniques at its AXA construction site at 750 Collins Street; and

- an anti-litter campaign, litter prevention and clean-up activities that achieved changes to people's behaviour during the Games and had considerable community involvement – 4331 volunteers participated in Games clean-up activities.

### Environmental sustainability legacies

The Games environmental initiatives had a number of short term and long term benefits. Short term benefits included: the Games were almost litter free, thousands of people used public transport and tonnes of waste were recycled. Legacies from the Games include the construction of more environmentally sustainable infrastructure at the Melbourne Cricket Ground, Melbourne Sports and Aquatic Centre, Commonwealth Games Athletes' Village and the State Netball Hockey Centre. The purchase and continued use of the litter barges also provides an ongoing legacy.

The lessons from the Commonwealth Games litter prevention activities were incorporated into the *Litter Prevention Kit – Campaign Toolkit* which is a publicly available litter prevention kit for local anti-litter campaigners produced by the Victorian Litter Action Alliance and Sustainability Victoria.

The *Environmental Report Card* itself represents an important legacy. The training of the volunteers,

staff and apprentices will also have lasting benefits. For example, the 'green plumbers' training modules in the Green Trades program are now offered to people attending RMIT plumbing apprentice training.

The Government has the opportunity to capitalise on the success of the Games and ensure that the investments in environmental sustainability objectives are fully realised. The following represent important opportunities for the Government to ensure the legacies of the Games are maximised:

- making the carbon neutral accounting methodology the minimum standard benchmark for all future major events in Victoria;
- incorporating the environmental sustainability lessons from the Games into a publicly available green events toolkit for event managers;
- building on the outcomes of public transport and the TravelSmart program to assist the Government to meet its 2010 transport target;
- further developing the environmental procurement guidelines – which were a first for Victoria;
- making the development of Environmental Management Plans for all major Victorian events standard practice;
- exploring opportunities for building public transport fares into the tickets of other major events; and

- promoting the lessons and providing information about the financial and environmental benefits of the 6 star athletes' village to the development industry. For example, an audit of the village estimated the combined financial benefits of the water saving and energy efficiency initiatives to be \$591 per household per year.

To achieve these potential benefits there must be an agency or agencies within Government assigned clear responsibility for undertaking the legacy actions.



**Dr Ian McPhail**  
Commissioner for Environmental Sustainability

# 1. Victorian Government's Commitment to Environmental Sustainability

The hosting of the XVIII Commonwealth Games provided Victoria with a great opportunity to demonstrate its commitment to a sustainable future.

The *Melbourne 2006 Commonwealth Games Environment Strategy* committed the Victorian Government and the Melbourne 2006 Commonwealth Games Corporation (organising committee) to deliver an environmentally sustainable event. The Strategy took an integrated approach to environmental sustainability and had three key objectives, to ensure the Melbourne 2006 XVIII Commonwealth Games were:

1. WaterWise
2. Carbon Neutral
3. Low Waste

Meeting these objectives involved developing and implementing:

- partnerships with the community, industry and government to improve environmental performance and promote achievements;
- management systems that met environmental objectives;
- environmentally sustainable procurement arrangements; and
- monitoring and reporting frameworks to evaluate the achievement of environmental performance targets.

The Victorian Government is committed to achieving lasting environmental benefits from the Games, including:

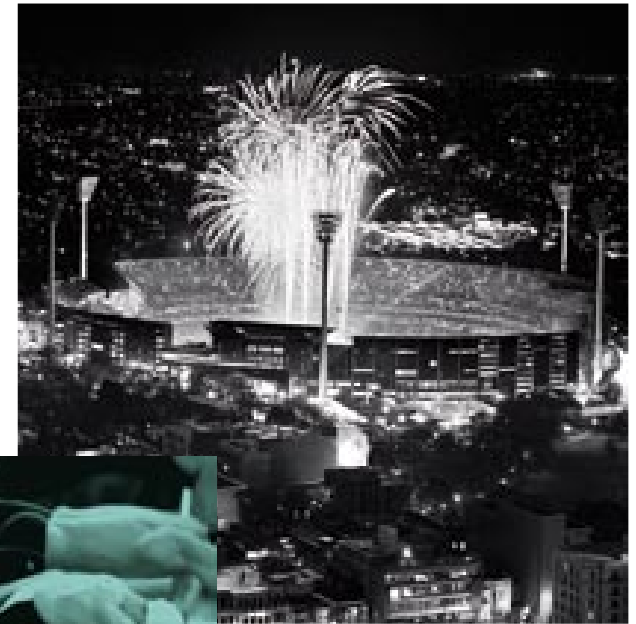
- practical outcomes and improvements – such as planting trees, enhancing water quality and increasing water efficiency in public places that hosted Games events or were a focus during the Games period;
- increased environmental awareness and responsibility within the community and the event management industry; and
- enhanced cooperation between all environment and other sectors to contribute to long-term change and environmental benefits.

## 2. Melbourne 2006 Commonwealth Games

The Melbourne 2006 Commonwealth Games was the largest sporting, cultural and community event in Victoria's history. The Games featured over 4000 athletes from all 71 Commonwealth nations and territories, participating in 16 sports and 24 disciplines. More than 1.5 million spectator seats were available in 31 sporting venues and 22 non-competition venues. More than 13,000 volunteers and nearly 2000 Games personnel helped deliver the event.

In addition to sporting events, a world-class cultural program, Festival Melbourne 2006, was staged during the Games celebrating the cultural diversity of the Commonwealth of Nations. The Victorian Government also encouraged public involvement in the Games through education and environment programs, Indigenous and community celebrations and business services.

The Games was delivered by the Office of Commonwealth Games Coordination ('OCGC') and the Melbourne 2006 Commonwealth Games Corporation ('Melbourne 2006').



### 3. Key Players

**OCGC and Melbourne 2006 worked together to achieve an environmentally sound, economically viable and socially responsible Commonwealth Games.**

#### **Delivering the Commonwealth Games**

##### **Melbourne 2006 Commonwealth Games Corporation**

Melbourne 2006 Commonwealth Games Corporation (Melbourne 2006) – was a statutory body administered by a board of 12 directors. Six directors were nominated by the Victorian Government; four, by the Australian Commonwealth Games Association; and two, by the Commonwealth Games Federation in London. As the Games organising committee, Melbourne 2006 worked in conjunction with the Office of Commonwealth Games Coordination to ensure the Games was a successful, world-class event.

##### **Office of Commonwealth Games Coordination**

Office of Commonwealth Games Coordination (OCGC) – was established in February 2002 within the Victorian Government’s Department for Victorian Communities. OCGC worked alongside Melbourne 2006 to deliver the biggest major event in Victoria’s history. OCGC’s objective was to help Victoria gain lasting benefits from the Games through enhanced infrastructure, stronger communities and a healthier environment. OCGC and Melbourne 2006 worked together to achieve an environmentally sound, economically viable and socially responsible Commonwealth Games.

#### **Presenting Partner Melbourne 2006 Commonwealth Games Environment Program**

##### **Toyota Australia**

Toyota Australia – Presenting Partner of the Melbourne 2006 Commonwealth Games Environment Program – the country’s largest car exporter, manufactures more than 110,000 vehicles each year in Victoria. Toyota recognises the need to change and grow in harmony with the environment and the community, and has established a culture that supports the Australian environment and the communities in which it operates. This means that manufacturing and marketing activities in Australia have detailed action plans to achieve specific environmental and social targets. Toyota Australia was also an Official Partner of the Melbourne 2006 Commonwealth Games, and provided 1500 vehicles for use by athletes, officials, staff and Games family. The locally-manufactured Camry was a signature vehicle for the Melbourne 2006 Games Fleet.

## **Delivering the environment strategy – agencies and departments**

### **Sustainability Victoria**

Sustainability Victoria (SV) – formerly EcoRecycle Victoria and Sustainable Energy Authority – is a Victorian Government statutory authority supporting the delivery of the Government’s *Framework for Environmental Sustainability*. SV focuses on changing behaviour by providing advice and assistance for individuals, businesses, governments and communities to act in a more environmentally sustainable way.

### **Environment Protection Authority**

Environment Protection Authority (EPA) – is a Victorian Government statutory body addressing land, water, air and noise pollution to create a safe, clean and sustainable environment for Victorians. EPA aims to develop partnerships with business, the community and government to develop and implement flexible, tailored programs to improve resource efficiency and reduce ecological impacts.

### **Melbourne Water**

Melbourne Water – is owned by the Victorian Government and manages Melbourne’s water supply catchments; removes and treats most of

Melbourne’s sewage; and manages rivers, creeks and major drainage systems throughout the Port Phillip and Westernport region.

### **Parks Victoria**

Parks Victoria – is a Victorian Government statutory body and is the custodian of a diverse estate of significant parks in Victoria and of the recreational management of Port Phillip Bay, Westernport and the Yarra and Maribyrnong rivers.

### **Department of Sustainability and Environment**

Department of Sustainability and Environment (DSE) – is responsible for the sustainability of Victoria’s natural and built environments. Its activities cover water management, parks, public land and forestry management, fire prevention and management, sustainability and greenhouse, land information and sustainability policy development.

### **Department of Infrastructure**

Department of Infrastructure (DOI) – is the lead provider of essential infrastructure in Victoria, with responsibility for transport, ports and marine, freight, information and communication technology, major development, energy and security.

### **Catchment Management Authorities**

Catchment Management Authorities (CMAs) – are Victorian Government statutory bodies responsible for integrated land and water management. There are 10 CMAs in catchment regions around the State, working in partnership with local communities, government, landholders and industry across catchments.

### **Greening Australia**

Greening Australia – is a national not-for-profit non-government environment organisation. In partnership with landholders, community, government and business, it tackles environmental degradation with an emphasis on practical experience, science, community engagement and commitment.

### **Conservation Volunteers Australia**




Conservation Volunteers Australia (CVA) – is a not-for-profit non-government environment organisation that attracts and manages a force of volunteers in practical conservation projects across Australia to improve the environment.

## 4. *Environment Report Card*

**This Report Card provides evidence of the lasting environmental benefits of the Melbourne 2006 Commonwealth Games for stakeholders and the community.**

This *Report Card* is a key part of the *Games Environment Strategy* and describes the initiatives that contributed to meeting the strategy objectives. It sets out the *Games Environment Strategy* partnerships, community involvement, management systems and procurement arrangements, and notes how the Games environment initiatives were monitored, implemented and reported.

This *Report Card* provides evidence of the lasting environmental benefits of the Melbourne 2006 Commonwealth Games for stakeholders and the community. Each initiative has been rated by the project managers and OCGC, and verified by the Commissioner for Environmental Sustainability. The rating system used has been adapted from the Swedish Environmental Objectives model as follows:

-  On the basis of all data sources and assessment of achievement of targets, Environment Strategy Objective (or initiative) has been/will be achieved within the defined timeframe
-  Environment Strategy Objective has been/will be achieved to a sufficient degree within the defined timeframe, but further activity measures will be required
-  Environment Strategy Objective has not been/will not be achieved within the required timeframe

This *Melbourne 2006 Commonwealth Games Environment Report Card* enables the Victorian Government and the Victorian community to appreciate the environmental impacts of the Games, and ascertain how to sustain lasting environmental benefits.

## 5. Community Involvement

The significance of the Commonwealth Games extends far beyond the scale of the sporting event. The Games had economic and social impacts on all sectors. In focusing on the environment – and highlighting what it takes to care for our environment now and into the future – it has therefore been vital to engage as many Victorians as possible leading up to, and during, the event.

OCGC, Melbourne 2006 and key environment players recognised that the best results for the environment would occur through community involvement and engagement, and by ensuring that key sporting messages were integrated with key messages about the environment in which those sporting events occurred. The Commonwealth Games was an important vehicle for stimulating an appreciation of the environment and building an understanding of the simple steps we can all take to reduce ecological impacts.

## 6. Communications

This *Report Card* highlights the environment initiatives in place in the lead-up to, during and after the Commonwealth Games. These initiatives are an important platform in the State Government's efforts to inform and educate the broader community about some of the more significant environmental issues affecting the State, and are therefore an important aspect to delivering lasting benefits of the Games.

To this end, a comprehensive media and communication strategy was developed and delivered for the Games Environment Program. This was integrated with the overarching advertising, media and communication strategies for the Melbourne 2006 Commonwealth Games.

A key component of this strategy was the appointment of the Melbourne 2006 Commonwealth Games Environment Ambassador, Mr Rob Gell. Mr Gell acted as community spokesperson for key environment messages relating to the staging of the Games. He also advocated on behalf of the program in dealings with environment stakeholders, business and the community.

The media and communications strategy proved integral in securing high awareness of the Games Environment Program and its initiatives.



## 7. Key Objectives in Practice

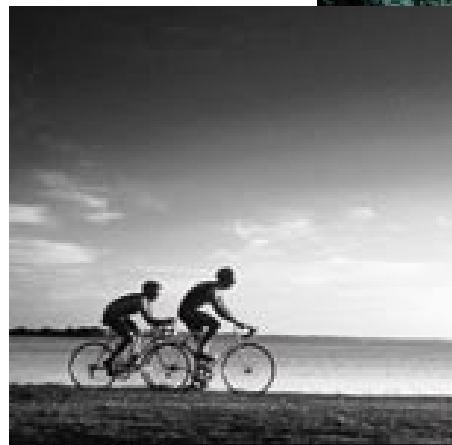
**The Victorian Government and environment stakeholders are committed to ensuring that the value of the Games' environmental initiatives last long after the Closing Ceremony.**

As previously outlined, the Victorian Government's commitment to making the Games environmentally sustainable was based on three key objectives, to ensure the Melbourne 2006 XVIII Commonwealth Games were:

1. WaterWise
2. Carbon Neutral
3. Low Waste

The Games were made WaterWise by using water-efficient appliances and water recycling at Games venues. A 'carbon neutral' Games was achieved by reducing greenhouse gas emissions from transport and energy use, and planting trees across the State to absorb carbon. Low waste initiatives included minimising waste generation, recycling wherever possible and using the Games to inspire an anti-litter campaign aimed at the whole community.

The following tables describe these initiatives in more detail, and assign the environmental outcome ratings for each.










## 8. Games Environmental Outcomes at a glance

# WaterWise



The Games were made WaterWise by using water-efficient appliances and water recycling at Games venues.

Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<p><b>1. Our River, Our Games</b></p> <p>Community environment action projects at 13 sites along the Yarra River</p>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Conservation Volunteers Australia</li> <li>■ Department of Sustainability and Environment</li> <li>■ Friends Groups</li> <li>■ Local Councils</li> <li>■ Local Schools</li> <li>■ Melbourne Water</li> <li>■ Parks Victoria</li> <li>■ Waterwatch groups</li> </ul>	<ul style="list-style-type: none"> <li>■ Revegetate river-bank and restore habitat at targeted sites</li> <li>■ Contribute to local strategies to enhance Yarra River revegetation</li> <li>■ Involve communities in Yarra River health activity prior to the Games and increase community awareness of environmental issues and the Yarra River</li> </ul>	<ul style="list-style-type: none"> <li>■ Audits of all sites recording site improvements to be conducted by Conservation Volunteers Australia in association with Melbourne Water and Parks Victoria</li> <li>■ Stakeholders (councils, friends groups, schools) to assess project activity, value and outcomes</li> </ul>	<ul style="list-style-type: none"> <li>■ 41 activity days across 17 locations involving more than 200 adults and 230 students</li> <li>■ 18,000 seedlings planted</li> <li>■ 80 kilograms of weeds removed</li> <li>■ 320 metres of fence repaired</li> </ul>	 <p>Refer to page 29 for detail</p>
<p><b>2. WaterWise Games Village</b></p>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Major Projects Victoria</li> <li>■ Village Park Consortium (Village developer)</li> </ul>	<ul style="list-style-type: none"> <li>■ Install systems to collect and recycle water collected in rainwater tanks at Games Village houses, townhouses and apartment buildings to be used in toilet flushing and watering of lawns and gardens</li> <li>■ Install systems to collect and recycle greywater for toilet flushing systems in the larger social housing apartment buildings</li> <li>■ Conserve water in dwellings through installation of AAA rated water efficient appliances and water efficient bathroom fittings</li> <li>■ Reduce water by planting drought tolerant and water efficient native and indigenous plants</li> <li>■ Reduce potable (drinking) water consumption at Village by up to 60% compared with average households</li> </ul>	<ul style="list-style-type: none"> <li>■ Site audits and report detailing systems, capacity and quantities of water which can be recycled</li> <li>■ Site audit and report detailing appliances and fittings installed and quantities of water which can be saved</li> <li>■ Site audit and report detailing species planted</li> <li>■ Assessment of estimated water consumption and savings relative to average households</li> </ul>	<ul style="list-style-type: none"> <li>■ Rainwater tanks installed in all 167 houses, 14 townhouses and 10 social housing apartment buildings, with water to be used for toilet flushing and watering gardens</li> <li>■ High quality greywater recycling system installed in 51 apartments</li> <li>■ AAA rated fixtures and fittings installed</li> <li>■ WaterWise initiatives estimated to cut potable water consumption by 30%</li> <li>■ Further work is underway to investigate options for further reducing potable water consumption</li> </ul>	 <p>Refer to page 30 for detail</p>





Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<b>3. Royal Park Wetlands</b>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ City of Melbourne</li> </ul>	<ul style="list-style-type: none"> <li>■ Improve quality of water from Moonee Ponds Creek and Royal Park Creek by purification through the wetlands</li> <li>■ Install systems to recycle water from wetlands to irrigate Royal Park sports fields and golf course</li> <li>■ Enhance awareness of wetlands, water recycling and habitat through public information</li> <li>■ Create new wetlands habitat to enhance the biodiversity of Royal Park</li> <li>■ Provide a new range of leisure and recreational opportunities including a network of paths linking the wetlands with the rest of Royal Park</li> </ul>	<ul style="list-style-type: none"> <li>■ Site audit and report detailing wetlands design and quantities of water which can be collected and treated</li> <li>■ Assessment of water recycling system from the wetlands</li> <li>■ Assessment of public information about wetlands</li> <li>■ Site survey detailing planting and identifying bird, aquatic and animal life expected at the wetlands</li> <li>■ Site survey of walking paths and other leisure infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>■ Five-hectare wetlands system constructed</li> <li>■ More than 140,000 plants planted in and around wetlands</li> <li>■ Wetlands system designed to provide recycled water to irrigate up to 20 hectares of open space</li> <li>■ Extensive network of pathways and a bird hide installed</li> </ul>	 Refer to page 31 for detail
<b>4. WaterWise Games Venues</b>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Developers</li> <li>■ Local Councils</li> </ul>	<ul style="list-style-type: none"> <li>■ Collect, treat and recycle rainwater for toilet flushing at Melbourne Sports and Aquatic Centre</li> <li>■ Collect, treat and recycle rainwater for garden irrigation at Melbourne Cricket Ground</li> <li>■ Collect, treat and recycle rainwater and pitch runoff water to water hockey pitch at State Netball Hockey Centre</li> <li>■ Collect, treat and recycle rainwater to water lawn bowls green at Darebin International Sports Centre</li> <li>■ Reduce water usage by planting drought tolerant and water efficient native and indigenous plants</li> <li>■ Conserve water in buildings by installing water efficient appliances, fixtures and fittings</li> </ul>	<ul style="list-style-type: none"> <li>■ Site audit and report detailing systems, capacity, quantities of water recycled and uses of recycled water</li> <li>■ Site audit and report detailing species planted</li> <li>■ Site audit and report detailing appliances and fittings installed and quantities of water saved</li> </ul>	<ul style="list-style-type: none"> <li>■ 90,000 litre rainwater collection and recycling system installed at MSAC, for use in toilet flushing</li> <li>■ 1.5 megalitre rainwater collection and recycling system at the MCG, for use in stand cleaning</li> <li>■ Water collection and recycling system at the State Netball Hockey Centre to recycle and reuse water runoff from the hockey pitches, reducing water consumption by 75%</li> <li>■ 150,000 litre rainwater collection and recycling system at Darebin International Sports Centre, for use in bowling green irrigation</li> <li>■ Water efficient fittings and fixtures installed at venues</li> </ul>	 Refer to page 32 for detail
<b>5. Sing for Water</b>	<ul style="list-style-type: none"> <li>■ City of Melbourne</li> <li>■ Festival Melbourne 2006</li> </ul>	<ul style="list-style-type: none"> <li>■ Raise awareness and funding for clean water and sanitation projects in the Pacific Region and South-East Asia through choirs creating and performing songs about water</li> </ul>	<ul style="list-style-type: none"> <li>■ Assessment of community involvement, money raised and projects supported</li> </ul>	<ul style="list-style-type: none"> <li>■ 500 adults from 27 community choirs performed in Adults Sing for Water concert</li> <li>■ Children from 12 primary schools performed in Children Sing for Water</li> <li>■ Over \$55,000 raised for clean water project in East Timor</li> </ul>	 Refer to page 33 for detail

# Carbon Neutral

A 'carbon neutral' Games was achieved by reducing greenhouse gas emissions from transport and energy use, and planting trees across the State to absorb carbon.



Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<p><b>1. Tree Planting Program</b></p>	<ul style="list-style-type: none"> <li>■ Department of Sustainability and Environment</li> <li>■ Greening Australia</li> <li>■ Parks Victoria</li> <li>■ Port Phillip and Westernport Catchment Management Authority and other CMAs</li> <li>■ TreeProject</li> <li>■ Volunteer planters and growers</li> </ul>	<ul style="list-style-type: none"> <li>■ Offset expected greenhouse gas emissions from the Games by planting up to 1 million trees which will be protected by carbon agreements</li> <li>■ Involve communities in germinating, growing, planting and tending plants</li> <li>■ Deliver long-term positive environmental benefits, including enhanced biodiversity, weed suppression, salinity mitigation, and revegetation of degraded land and habitat</li> <li>■ Improve landscaping at venues by planting trees, including 25,000 plants at the State Mountain Bike Course, Lysterfield</li> </ul>	<ul style="list-style-type: none"> <li>■ Audit of greenhouse sequestration, including site audits and carbon agreements</li> <li>■ Assessment of volunteer involvement, incorporating feedback from volunteers</li> <li>■ Assessment of additional benefits, including contribution to biodiversity</li> <li>■ Site audit and report detailing species planted, landscape design and volunteers involved</li> </ul>	<ul style="list-style-type: none"> <li>■ Planting completed at 15 locations around Victoria</li> <li>■ Over 214,000 tubestock seedlings planted and over 10 million seeds planted on over 450 hectares</li> <li>■ Site audits revealed that 856,815 seedlings are now growing, with more expected to germinate and grow over the coming months</li> <li>■ Planting expected to offset 109,000 tonnes of greenhouse gas emissions, 5% more than that generated by the Games</li> <li>■ 2000 volunteers involved</li> <li>■ Significant additional benefits were delivered, including biodiversity/habitat restoration, salinity mitigation, pest control, water quality/erosion control</li> </ul>	<p style="text-align: center;"></p> <p>Refer to page 34 for detail</p>
<p><b>2. Six-star Energy Rating at Athletes Village</b></p> <p>This applies to Village houses, townhouses and apartments</p>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Village Park Consortium (Village developer)</li> </ul>	<ul style="list-style-type: none"> <li>■ Reduce heating and cooling demands of dwellings at Athletes' Village by designing features and systems to achieve six-star energy rating</li> </ul>	<ul style="list-style-type: none"> <li>■ Site audit and report comparing energy use to average household</li> </ul>	<ul style="list-style-type: none"> <li>■ Six-star and energy efficient Village houses estimated to save \$591 on energy and water bills per year when compared to an average home</li> <li>■ Six-star houses estimated to use 71% less heating and 32% less cooling than average houses</li> </ul>	<p style="text-align: center;"></p> <p>Refer to page 39 for detail</p>


Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<b>3. Energy Efficient Athletes' Village</b>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Major Projects Victoria</li> <li>■ Sustainability Victoria</li> <li>■ Village Park Consortium</li> </ul>	<p>Reduce energy consumption at Athletes' Village by installing a range of features including:</p> <ul style="list-style-type: none"> <li>■ solar hot water systems in houses, townhouses and social housing apartments</li> <li>■ energy efficient lighting in all houses, including motion sensors</li> <li>■ advanced insulation techniques including solar hot water heat trace systems to minimise heat loss from pipes, inverted wall construction to minimise heat loss/gain, and 'phase change' materials in hot water storage vessels to minimise heat loss</li> <li>■ passive cooling by automated hot air venting from house roofs</li> <li>■ gas-fired solar-assisted hydronic heating in social housing dwellings in non-heritage precinct</li> <li>■ energy efficient and solar assisted street lighting</li> </ul>	<ul style="list-style-type: none"> <li>■ Site audit and report detailing features and savings compared to average household</li> </ul>	<ul style="list-style-type: none"> <li>■ Six-star and energy efficient Village houses estimated to save \$591 on energy and water bills per year when compared to an average home</li> <li>■ Solar hot water installed in all houses, townhouses and social housing apartments</li> <li>■ Grid-interactive solar photovoltaic on Village street lighting installed. The photovoltaic panels are expected to generate as much energy as will be used by the lights</li> </ul>	 Refer to page 40 for detail
<b>4. Green Powered Games</b>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Sustainability Victoria</li> <li>■ Village Park Consortium</li> </ul>	<ul style="list-style-type: none"> <li>■ Promote and support renewable energy by powering Games venues by Green Power during the Games and installing solar photovoltaic panels at the Athletes' Village and MCG</li> </ul>	<ul style="list-style-type: none"> <li>■ Energy consumption audit at Games venues, and report confirming supply of Green Power</li> <li>■ Site audit and report of renewable energy infrastructure, capacity and energy generation by solar panels</li> </ul>	<ul style="list-style-type: none"> <li>■ 3.7 gigawatthours of Green Power provided to power the Games, saving up to 5000 tonnes of greenhouse gas emissions. Electricity consumption at Games venues during Games events was 1.58 gigawatthours</li> <li>■ Solar photovoltaic panels installed at MCG (200m<sup>2</sup>) will generate up to 22 megawatt hours of electricity each year. Athletes' Village photovoltaic panels on street lights will generate as much energy as is consumed by the street lights</li> </ul>	 Refer to page 41 for detail
<b>5. Energy Efficient Games Venues</b>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Developers</li> <li>■ Local Councils</li> <li>■ Major Projects Victoria</li> <li>■ Sport and Recreation Victoria</li> </ul>	<p>Reduce energy consumption at Melbourne Sports and Aquatic Centre by installing:</p> <ul style="list-style-type: none"> <li>■ an energy efficient cogeneration facility using natural gas to provide heat and energy</li> <li>■ solar hot water systems at MSAC to generate domestic hot water</li> </ul> <p>Reduce energy consumption at MCG by installing:</p> <ul style="list-style-type: none"> <li>■ solar hot water systems to generate hot water for non-event day usage</li> <li>■ passive solar shading and energy efficient heating, cooling and ventilation</li> <li>■ energy efficient lighting</li> <li>■ motion sensors, and low energy use appliances, equipment and lighting</li> </ul>	<ul style="list-style-type: none"> <li>■ Site audit and report of renewable energy and cogeneration infrastructure, capacity and energy generation and savings</li> </ul> <ul style="list-style-type: none"> <li>■ Site audit and report detailing features and estimated savings</li> </ul>	<ul style="list-style-type: none"> <li>■ Solar hot water, cogeneration and energy efficiency features installed at the MCG</li> <li>■ The cogeneration plant will provide base load electricity to MSAC Stage 1 during normal daily operations and recover 1100 kilowatts of waste heat</li> <li>■ The solar hot water system at the MCG can replace up to 40 kilowatts of energy</li> </ul>	 Refer to page 41 for detail

Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<b>6. Bicycle Facilities</b>	<ul style="list-style-type: none"> <li>OCGC</li> <li>Bicycle Victoria</li> <li>Village Park Consortium</li> </ul>	<ul style="list-style-type: none"> <li>Encourage cycling by providing permanent bicycle storage and permanent bicycle lanes at Athletes' Village</li> <li>Encourage cycling through secure Games-time bicycle parking at key Games precincts and venues</li> </ul>	<ul style="list-style-type: none"> <li>Site audit and report detailing permanent bicycle storage and facilities</li> <li>Site audit and report on Games-time bicycle parking and usage</li> </ul>	<ul style="list-style-type: none"> <li>Permanent bicycle parking is in place at the Village and further facilities will be added</li> <li>Temporary bicycle parking was provided at key Games precincts and venues and was at 30-90% capacity (depending on location) during the Games</li> </ul>	 Refer to page 42 for detail
<b>7. Public Transport</b>	<ul style="list-style-type: none"> <li>OCGC</li> <li>Department of Infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Provide an integrated, accessible and effective approach to public transport during the Games, resulting in increased patronage</li> <li>Increase public transport patronage by providing free public transport and discounted regional travel for Games ticketholders and Games workforce</li> </ul>	<ul style="list-style-type: none"> <li>Assessment of public transport information provision, usage and service levels during Games</li> </ul>	<ul style="list-style-type: none"> <li>Enhanced public transport services and communications were put in place for the Games. 75% of attendees travelled to the Games by public transport. Over 30,000 extra services were in operation</li> <li>Free metropolitan public transport and discounted regional travel was provided to all Games ticketholders and workforce</li> </ul>	 Refer to page 43 for detail
<b>8. Games Vehicles</b>	<ul style="list-style-type: none"> <li>Melbourne 2006</li> <li>Toyota</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate vehicle energy efficiency by incorporating a range of fuel-efficient vehicles, including the hybrid Toyota Prius and the locally manufactured Toyota Camry, into the Games fleet</li> </ul>	<ul style="list-style-type: none"> <li>Audit of Games vehicles and their usage</li> </ul>	<ul style="list-style-type: none"> <li>1500 Toyota vehicles were provided as part of the Games, comprising 60% locally made Toyota Camrys and also including 50 fuel-efficient hybrid Toyota Prius</li> </ul>	 Refer to page 44 for detail
<b>9. TravelSmart</b>	<ul style="list-style-type: none"> <li>Department of Infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Deliver TravelSmart program to up to 10,000 households near key Games venues and up to 10,000 employees in the Central Business District and Southbank to encourage walking, cycling, and public transport in the period leading up to, during and beyond the Games</li> </ul>	TravelSmart outcomes and survey results: <ul style="list-style-type: none"> <li>number of employees covered by companies who have completed staff travel surveys and have developed or are developing green transport plans</li> <li>number of green transport plans produced</li> <li>travel behaviour change as measured by annual staff survey of travel behaviour</li> <li>participation in WalkSmart and CycleSmart programs</li> <li>proportion of households that joined the Commonwealth Games TravelSmart program</li> <li>degree of travel behaviour change across target population as measured by household travel behaviour surveys</li> </ul>	<ul style="list-style-type: none"> <li>10,694 employees in 37 workplaces were engaged through TravelSmart Workplaces. All of these workplaces conducted staff travel surveys and 11 have completed staff transport plans</li> <li>9929 households were invited to participate in TravelSmart Communities and 3216 households elected to participate. Post-project surveys indicated an increase in cycling trips from 4% to 7.5% and an increase in public transport travel and a decrease in private car trips</li> </ul>	 Refer to page 44 for detail


# Low Waste

Low waste initiatives included minimising waste generation, recycling wherever possible and using the Games to inspire an anti-litter campaign aimed at the whole community.

Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<p><b>1a. Games Recycling</b></p> <p>Minimise waste at Games time and demonstrate how to run 'a low waste event'</p>	<ul style="list-style-type: none"> <li>OCGC</li> <li>Melbourne 2006</li> <li>Games Contractors</li> <li>City of Melbourne</li> <li>Sustainability Victoria</li> </ul>	<ul style="list-style-type: none"> <li>Minimise waste by implementing an effective Games waste minimisation system covering packaging, merchandisers, Games suppliers and overlay (venue fit-outs)</li> <li>Demonstrate how to reduce waste at a major event</li> </ul>	<p>Evaluation of implementation of Games waste minimisation system, incorporating:</p> <ul style="list-style-type: none"> <li>description of system implemented</li> <li>policies and procedures implemented</li> <li>waste minimisation results, including quantities diverted/saved</li> <li>implementation of packaging guidelines, including packaging used</li> <li>use of reusable crockery, including proportion of customers served using this</li> <li>overlay materials reused or recycled, including quantities and proportions of total overlay</li> <li>training and communications</li> <li>development and use of a Green Events plan incorporating environment learnings from the Commonwealth Games and to complement the Sustainability Victoria <i>WasteWise Events Toolkit</i></li> </ul>	<p>A wide range of initiatives was implemented to minimise the generation of waste including:</p> <ul style="list-style-type: none"> <li>packaging guidelines</li> <li>WasteWise Catering training</li> <li>use of reusable materials</li> </ul> <p>The amount of waste generated at venues was less than half that predicted</p>	 <p>Refer to page 46 for detail</p>
<p><b>1b. Games Recycling</b></p> <p>Recycle at public areas and back-of-house in Games time</p>	<ul style="list-style-type: none"> <li>OCGC</li> <li>Melbourne 2006</li> <li>Games Contractors</li> <li>Local Councils</li> <li>City of Melbourne</li> </ul>	<ul style="list-style-type: none"> <li>Maximise recycling by implementing an effective public recycling system for all Games venues and precincts, with a goal of up to 70% recycling in Athletes' Village and competition venues controlled by M2006</li> <li>Maximise recycling by implementing an effective back-of-house recycling system that incorporates recycling of bottles, cans and cardboard and additionally, at venues, includes organic food waste and fats and oils recycling</li> </ul>	<p>Games-time waste assessments and waste management evaluation report incorporating:</p> <ul style="list-style-type: none"> <li>description of systems implemented</li> <li>infrastructure and bins provided</li> <li>permanent place recycling</li> <li>waste streams and quantities collected by venue</li> <li>destinations of collected recycling</li> <li>signage and communications</li> <li>training; venue specific variations</li> <li>lessons learned (with input from cleaners, organisers and contractors)</li> </ul>	<ul style="list-style-type: none"> <li>The target level of recycling may have been impacted by the type and low overall level of waste generated by the event</li> </ul> <p>Games-wide recycling systems were put in place:</p> <ul style="list-style-type: none"> <li>public place recycling bins identified by yellow bin caps, to recycle bottles, cans, paper and cardboard etc.</li> <li>back-of-house food organics, cardboard, mixed recyclables and glass were separated for recycling</li> <li>public domain areas outside Games venues achieved recycling rate of 26%</li> </ul>	 <p>Refer to page 47 for detail</p>

Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
			<p>Games-time waste assessments and waste management evaluation report incorporating:</p> <ul style="list-style-type: none"> <li>description of systems implemented</li> <li>infrastructure and bins provided</li> <li>permanent place recycling; waste streams and quantities collected by venue</li> <li>destinations of collected recycling</li> <li>signage and communications</li> <li>training; venue specific variations</li> <li>lessons learned (with input from cleaners, organisers and contractors)</li> </ul>	<ul style="list-style-type: none"> <li>Public and back-of-house areas in City of Melbourne service hubs achieved a recycling rate of 52%</li> <li>Games venues achieved a recycling rate of 57%, not meeting the target of 70% recycling</li> </ul>	
<p><b>2. Street Cleaning and Graffiti Removal</b></p>	<ul style="list-style-type: none"> <li>OCGC</li> <li>City of Melbourne</li> </ul>	<ul style="list-style-type: none"> <li>Present a clean city by enhancing litter and waste collection, street cleaning and removing graffiti in the lead-up to and during the Games</li> </ul>	<ul style="list-style-type: none"> <li>Assessment of activity by locations and outcomes</li> </ul>	<p>Enhanced street cleaning and graffiti removal was implemented for the Games.</p> <p>The following were collected in the lead up to and during the Games:</p> <ul style="list-style-type: none"> <li>218.5 tonnes of litter from street sweepings</li> <li>83 tonnes of litter from bins</li> <li>20 tonnes of rubbish from illegal dumpings</li> </ul> <p>Enhanced footpath cleaning resulted in the cleaning of 5800m<sup>2</sup> of footpath</p> <p>Cleaning and graffiti removal from 5300m<sup>2</sup> of surfaces</p>	 <p>Refer to page 48 for detail</p>
<p><b>3. Litter Barge</b></p>	<ul style="list-style-type: none"> <li>OCGC</li> <li>Parks Victoria</li> </ul>	<ul style="list-style-type: none"> <li>Improve health of the Yarra and Maribyrnong Rivers by increasing trapping and collection of litter using the new Commonwealth Games litter barge, plus additional litter traps and new manoeuvrable litter management vessel</li> </ul>	<ul style="list-style-type: none"> <li>Report on litter barges, including operation and types and quantity of litter collected</li> </ul>	<ul style="list-style-type: none"> <li>The Pelican large litter barge collected 2700 m<sup>3</sup> of litter from the Yarra and Maribyrnong Rivers between August 2004 and March 2006</li> <li>The Silver Gull small litter barge collected 138 m<sup>3</sup> litter from the banks of the Yarra River between 13 February and 3 April 2006</li> </ul>	 <p>Refer to page 49 for detail</p>
<p><b>4. Public Litter Clean-Up Days</b></p>	<ul style="list-style-type: none"> <li>OCGC</li> <li>Clean Up Australia</li> <li>Sustainability Victoria</li> </ul>	<ul style="list-style-type: none"> <li>Involve community in public litter clean-up days in the lead-up to the Games</li> </ul>	<ul style="list-style-type: none"> <li>Assessment of clean-up days and outcomes, including volunteer participation</li> </ul>	<ul style="list-style-type: none"> <li>Over 4300 local volunteers were involved in cleaning up approximately 97 tonnes of litter at 81 sites in February and March 2006</li> </ul>	 <p>Refer to page 50 for detail</p>
<p><b>5. Anti-Litter Campaign</b></p>	<ul style="list-style-type: none"> <li>OCGC</li> <li>Sustainability Victoria</li> <li>Victorian Litter Action Alliance</li> </ul>	<ul style="list-style-type: none"> <li>Reduce litter and littering and raise community awareness of litter by conducting an anti-litter campaign inspired by the Games – ‘Let’s start training for the Games’</li> </ul>	<ul style="list-style-type: none"> <li>Evaluation of anti-litter campaign, including assessment of litter behavioural change and litter, community awareness and engagement</li> </ul>	<ul style="list-style-type: none"> <li>The lowest littering rate (10%) ever recorded in Australia was recorded during the Games. The average littering rate is approximately 30%. The littering rate was measured in hundreds of observations using the Clean Communities Assessment Tool, which has been used since 2003 on the east coast of Australia</li> </ul>	 <p>Refer to page 51 for detail</p>





Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
				<ul style="list-style-type: none"> <li>The community had very strong recognition of the campaign (49%) and 14% indicated that they would change their behaviour as a result of the campaign</li> <li>In public surveys undertaken during the Games, 77% of those in Games locations were satisfied with the management of litter during the Games, a marked improvement from the 44% baseline data</li> </ul>	
<b>6. Litter Trapping</b>	<ul style="list-style-type: none"> <li>City of Melbourne</li> <li>City of Port Phillip</li> <li>Melbourne Water</li> </ul>	<ul style="list-style-type: none"> <li>Reduce litter in the Yarra and St Kilda Beach by upgrading litter traps in stormwater outlets</li> </ul>	<ul style="list-style-type: none"> <li>Report on upgrades to stormwater litter traps and quantities of litter trapped</li> </ul>	<ul style="list-style-type: none"> <li>A range of litter traps were installed by City of Melbourne and City of Port Phillip to prevent litter entering the Yarra River and Port Phillip Bay</li> <li>The City of Melbourne litter traps are estimated to capture 800 kilograms each annually, preventing this waste from entering the Yarra and Port Phillip Bay</li> </ul>	 <p>Refer to page 52 for detail</p>
<b>7. Recycling Construction and Demolition Waste</b>	<ul style="list-style-type: none"> <li>OCGC</li> <li>Infrastructure Contractors</li> <li>Major Projects Victoria</li> <li>Sport and Recreation Victoria</li> <li>Sustainability Victoria</li> </ul>	<ul style="list-style-type: none"> <li>Reduce waste from Games construction projects by aiming to recycle or reuse 95% of construction and demolition waste from the MCG, MSAC and Village construction projects</li> </ul>	<p>Audit of quantity and destination of recycling materials, based on waste generation and diversion figures, supported by on-site assessments and verification of disposal channels:</p> <ul style="list-style-type: none"> <li>on-site assessments</li> <li>verification of destinations</li> <li>complete waste generation and diversion figures to be provided for Village, MCG and MSAC</li> <li>inclusion of recycling specifications in contracts</li> <li>quantities of soil reused on site</li> </ul>	<ul style="list-style-type: none"> <li>Overall, 89% (by weight) of construction and demolition waste was recycled from the three main Games construction projects</li> <li>The recycling rate achieved was very close to the target and is in excess of the recycling rate achieved for other major construction projects</li> </ul>	 <p>Refer to page 53 for detail</p>
<b>8. Environmentally Preferable Construction Materials</b>	<ul style="list-style-type: none"> <li>OCGC</li> <li>Infrastructure Contractors</li> <li>Major Projects Victoria</li> <li>Sport and Recreation Victoria</li> </ul>	<ul style="list-style-type: none"> <li>Reduce environmental impact of infrastructure projects by using environmentally preferable materials, including plantation timbers and recycled steel</li> </ul>	<p>Audit of materials, including refrigerants, used in infrastructure projects:</p> <ul style="list-style-type: none"> <li>types of timber used, quantities and uses</li> <li>recycled steel used, quantities and uses</li> <li>reuse of materials on-site, such as mulch, concrete and soil</li> <li>use of environmentally sustainable refrigerants in all new venue refrigeration and air-conditioning units</li> </ul>	<ul style="list-style-type: none"> <li>A range of environmentally preferable materials were used in key Games infrastructure projects, including ozone-friendly refrigerants, plantation timber, recycled steel were used and concrete and soil were recycled and reused on-site</li> <li>While there is evidence of use, quantities of environmentally preferable materials used were not able to be determined</li> </ul>	 <p>Refer to page 54 for detail</p>

Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<b>9. Temporary Equipment, Infrastructure and Overlay</b>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Melbourne 2006</li> </ul>	<ul style="list-style-type: none"> <li>■ Minimise disposal of equipment and infrastructure by hiring and/or using temporary infrastructure, equipment and overlay</li> </ul>	<ul style="list-style-type: none"> <li>■ Audit of post-Games destinations of infrastructure and equipment</li> </ul>	<ul style="list-style-type: none"> <li>■ 90% (by value) of temporary equipment, infrastructure and overlay used for the Games was hired. Of the remainder purchased, the majority were single use items (eg. generator fuel), items purchased under buy-back arrangements or items that will be sold via public tenders/auctions</li> </ul>	 Refer to page 54 for detail
<b>10. Reusing Sporting Equipment</b>	<ul style="list-style-type: none"> <li>■ Melbourne 2006</li> <li>■ Sporting Clubs and Associations</li> </ul>	<ul style="list-style-type: none"> <li>■ Distribute high quality sports equipment used at the Games among clubs and associations across Victoria</li> </ul>	<ul style="list-style-type: none"> <li>■ Audit of post-Games distribution of sporting equipment</li> </ul>	<ul style="list-style-type: none"> <li>■ Equipment distribution to State and community-based sporting clubs has commenced and will be completed in late 2006</li> </ul>	 Refer to page 55 for detail

# Games Systems and Processes

We're demonstrating leadership in environmental performance within the community, business and major event industry.

Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<p><b>1. Environmental Management Plans</b></p>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Melbourne 2006</li> <li>■ Environment Protection Authority</li> <li>■ Major Projects Victoria</li> <li>■ Sport and Recreation Victoria</li> <li>■ Sustainability Victoria</li> </ul>	<ul style="list-style-type: none"> <li>■ Minimise environmental impact of venue operations by developing and implementing Environmental Management Plans at key Games venues</li> <li>■ Minimise environmental impact of Games construction projects by implementing Construction Environmental Management Plans</li> </ul>	<ul style="list-style-type: none"> <li>■ Audit of implementation of Games Environmental Management Plans at each key Games infrastructure project, targeting waste minimisation, energy conservation, water conservation and environmental incident management</li> <li>■ Audit of implementation of Construction Environmental Management Systems (EMS) developed and implemented at Games construction projects, including Athletes' Village, MCG, MSAC and State Mountain Bike Course</li> </ul>	<ul style="list-style-type: none"> <li>■ Environmental Management Plans for Games venues were developed and implemented at Games venues, integrated with the venue operations systems</li> <li>■ Construction Environmental Management Plans were developed and implemented at key Games construction projects. The State Mountain Bike Course Environmental Management Plan guided the design and construction of the course</li> </ul>	<p style="text-align: center;"></p> <p>Refer to page 56 for detail</p>
<p><b>2. Environmental Procurement Guidelines</b></p>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Melbourne 2006</li> </ul>	<ul style="list-style-type: none"> <li>■ Minimise environmental impact of Games purchasing by developing and implementing Environmental Procurement Guidelines for Games tenderers</li> </ul>	<p>Assessment of implementation of Environmental Procurement Guidelines in Games procurement to examine:</p> <ul style="list-style-type: none"> <li>■ implementation</li> <li>■ assessment process</li> <li>■ inclusion of environmental specifications in Games procurement</li> </ul>	<ul style="list-style-type: none"> <li>■ Environmental Procurement Guidelines were developed and implemented for Games procurement</li> </ul>	<p style="text-align: center;"></p> <p>Refer to page 57 for detail</p>

Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<b>3. ECO-Buy Business</b>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Melbourne 2006</li> <li>■ ECO-Buy</li> <li>■ Sustainability Victoria</li> </ul>	<ul style="list-style-type: none"> <li>■ Increase awareness and purchase of green products by Games businesses by developing and implementing the ECO-Buy Business program</li> </ul>	<p>Assessment of Games ECO-Buy Business program activity and outcomes providing evidence of change towards green purchasing including:</p> <ul style="list-style-type: none"> <li>■ number of businesses joined</li> <li>■ progress of businesses in developing and adopting green purchasing policies</li> <li>■ progress of businesses developing and adopting green purchasing action plans</li> <li>■ number of businesses with nominated staff representatives and high level managerial support</li> </ul>	<ul style="list-style-type: none"> <li>■ ECO-Buy Business program was developed and implemented to assist businesses purchase environmentally-friendly products and integrate sustainable purchasing practices and attitudes into their organisation. Toyota Australia joined as the foundation member of ECO-Buy Business</li> <li>■ A wide range of green purchasing materials were developed by ECO-Buy Business including ECO Buy Guide and specifications</li> <li>■ 15 businesses, including Games sponsors Toyota and Transurban, have joined ECO-Buy Business (at June 2006)</li> <li>■ Further activity to increase membership is occurring, including additional promotions and liaison with businesses</li> </ul>	 <p>Refer to page 58 for detail</p>
<b>4. Environment Stakeholder Forum</b>	<ul style="list-style-type: none"> <li>■ Key environment stakeholders involved in delivering Environment Strategy initiatives</li> </ul>	<ul style="list-style-type: none"> <li>■ Engage stakeholders in the Games Environment Program by establishing an Environment Stakeholder Forum</li> </ul>	<ul style="list-style-type: none"> <li>■ Assessment of implementation and outcomes of Environment Stakeholder Forum, including stakeholder involvement in Games Environment Strategy activities</li> </ul>	<ul style="list-style-type: none"> <li>■ The Games Environment Stakeholder Forum was established by the Minister for Commonwealth Games and chaired by Mr Rob Gell, the Games Environment Ambassador. The stakeholders met five times through the Forum over 2005 and 2006</li> </ul>	 <p>Refer to page 59 for detail</p>
<b>5. Green Events Plan</b>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Melbourne 2006</li> <li>■ City of Melbourne</li> </ul>	<ul style="list-style-type: none"> <li>■ Implement knowledge gained from Commonwealth Games by developing a Green Events plan for future events</li> </ul>	<ul style="list-style-type: none"> <li>■ Development and use of a Green Events plan incorporating environment learnings from the Commonwealth Games</li> </ul>	<ul style="list-style-type: none"> <li>■ A Green Events plan was developed and will be further developed by Sustainability Victoria</li> </ul>	 <p>Refer to page 60 for detail</p>
<b>6. Local Environmental Initiatives</b>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Local Councils</li> </ul>	<p>Implement environment initiatives through the Commonwealth Games ‘Getting Involved’ program, including:</p> <ul style="list-style-type: none"> <li>■ tree planting</li> <li>■ developing and upgrading walking/riding paths</li> <li>■ clean-up activities</li> <li>■ public place recycling</li> </ul>	<ul style="list-style-type: none"> <li>■ Report on implementation of environment initiatives as part of Commonwealth Games ‘Getting Involved’ program</li> </ul>	<ul style="list-style-type: none"> <li>■ 8 local councils undertook environment-related community projects as part of the Games ‘Getting Involved’ program, ranging from the development of trails to conducting local clean-up days</li> </ul>	 <p>Refer to page 61 for detail</p>

# Karak




Karak was the official Games mascot, the endangered south-eastern red-tailed black cockatoo. Karak is found in the south-west of Victoria and south-east of South Australia.

Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<p><b>1. Games Mascot 'Karak'</b></p>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Melbourne 2006</li> <li>■ Department of Sustainability and Environment</li> </ul>	<ul style="list-style-type: none"> <li>■ Increase awareness of the Games mascot 'Karak', the endangered south-eastern red-tailed black cockatoo, and of action being taken to protect the species through a range of initiatives including:               <ul style="list-style-type: none"> <li>■ launching Karak number plates – money raised will be used to fund activities to protect the south-eastern red-tailed black cockatoo</li> <li>■ distributing information in the community about the south-eastern red-tailed black cockatoo</li> <li>■ revegetating and protecting Karak's habitat by tree planting in the area</li> <li>■ educating children about Karak and its endangered species via the Games Education Program</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>■ Assessment of the outcomes of 'Karak' initiatives</li> </ul>	<ul style="list-style-type: none"> <li>■ \$180,000 was raised through the sale of Karak vehicle number plates. The funds will go to organisations working to protect the South-eastern red-tailed black cockatoo</li> <li>■ The Federal Government has committed \$1.3 million to a south-eastern black cockatoo rescue plan</li> <li>■ A 10 hectare site near Casterton was revegetated, providing habitat for the Karak</li> <li>■ The Games Education program incorporated materials and information on Karak and endangered species</li> <li>■ Karak information was distributed to the community in a fact sheet and information was placed on the Games website</li> </ul>	<p style="text-align: center;">😊</p> <p>Refer to page 62 for detail</p>

# Education and Training

We assisted Games patrons, sponsors and suppliers, school children, community, staff and volunteers to learn about and participate in Games environmental initiatives.

Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<b>1. Schools Education</b>	<ul style="list-style-type: none"> <li>OCGC</li> <li>Department of Education and Training</li> <li>Department of Sustainability and Environment</li> </ul>	<p>Educate school students about environmental issues through the Commonwealth Games Education Program including:</p> <ul style="list-style-type: none"> <li>environmental components in Games curriculum materials</li> <li>distributing posters and articles that provide information about environmental issues</li> <li>involving school students in environment activities including tree planting</li> <li>involving schools in Commonwealth Games WasteWise Event Challenge</li> <li>providing environmental information in schools <i>Gameszine</i></li> </ul>	<ul style="list-style-type: none"> <li>Assessment of take-up of curriculum and involvement of students</li> </ul>	<ul style="list-style-type: none"> <li>Commonwealth Games school curriculum materials that incorporated environmental components were distributed to 2400 schools in Victoria</li> <li>15,000 water conservation posters were produced and distributed to schools</li> <li>The Commonwealth Games WasteWise Event Challenge attracted entries from schools throughout Victoria – the winners were Hughesdale Primary and East Bentleigh Primary</li> <li>More than 1000 schoolchildren were involved in planting trees at Games sites around the State</li> </ul>	 <p>Refer to page 63 for detail</p>
<b>2. Volunteer and Staff Training</b>	<ul style="list-style-type: none"> <li>OCGC</li> <li>Melbourne 2006</li> <li>Holmesglen Institute of TAFE</li> <li>Sustainability Victoria</li> </ul>	<p>Increase awareness of environmental issues and initiatives by Games staff and volunteers by incorporating:</p> <ul style="list-style-type: none"> <li>environmental components in Games volunteer training</li> <li>environmental training as part of workplace induction</li> </ul>	<ul style="list-style-type: none"> <li>Assessment of implementation of volunteer and workforce training and environmental components</li> </ul>	<ul style="list-style-type: none"> <li>Staff and volunteers were provided with information on the Games Environment program and their training reinforced Games environment objectives</li> </ul>	 <p>Refer to page 64 for detail</p>

Initiative	Key players	What did we aim to achieve?	How did we assess whether those aims were achieved?	Outcomes	Rating
<b>3. Community Environmental Education</b>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Melbourne 2006</li> <li>■ Environment Protection Authority</li> <li>■ Sustainability Victoria</li> </ul>	<p>Increase awareness of environmental issues and initiatives by providing information on the Games Environment Program, including:</p> <ul style="list-style-type: none"> <li>■ appointing Games Environment Ambassador</li> <li>■ encouraging information and knowledge transfer between key Games stakeholders through 'Our Games' forum and other community events</li> <li>■ publishing information on Games websites</li> <li>■ providing environment information to Games Village residents and visitors, and future residents of the Village</li> <li>■ running a pre-Games and Games-time anti-litter campaign</li> <li>■ providing information about Games environment initiatives to Games workforce, including volunteers, contractors and suppliers</li> </ul>	<ul style="list-style-type: none"> <li>■ Assessment of environment communications, including website stories, litter campaign and infrastructure communications</li> </ul>	<ul style="list-style-type: none"> <li>■ Information on Games environment initiatives appeared in metropolitan and regional media</li> <li>■ Information was also shared through the Our Games Forum, through the Games Environment Ambassador and on the Games websites</li> <li>■ A comprehensive Games anti-litter campaign was also delivered</li> </ul>	 Refer to page 65 for detail
<b>4. Green Trades</b>	<ul style="list-style-type: none"> <li>■ OCGC</li> <li>■ Green Plumbers</li> <li>■ RMIT</li> <li>■ Sustainability Victoria</li> </ul>	<ul style="list-style-type: none"> <li>■ Increase knowledge of environmental sustainability and environmental products and services among plumbing and electrical apprentices working at key Games infrastructure projects by delivering of 'Green Trades' training</li> </ul>	<ul style="list-style-type: none"> <li>■ Assessment of effectiveness of Green Trades training through surveys of participants</li> </ul>	<ul style="list-style-type: none"> <li>■ Green Trades provided tailored environmental training program for 31 plumbing and electrical apprentices working at Commonwealth Games construction sites. Green Trades training has now been incorporated into RMIT plumbing apprentice training and further incorporation into trades training is being investigated</li> </ul>	 Refer to page 66 for detail
<b>5. Savings in the City</b>	<ul style="list-style-type: none"> <li>■ City of Melbourne</li> <li>■ City West Water</li> <li>■ Sustainability Victoria</li> </ul>	<ul style="list-style-type: none"> <li>■ Reduce environmental impacts at key hotels in Melbourne by implementing water, energy and waste saving projects, under the 'Savings in the City' program</li> </ul>	<ul style="list-style-type: none"> <li>■ Assessment of hotel involvement, including activities undertaken and resources saved</li> </ul>	<ul style="list-style-type: none"> <li>■ 24 hotels enrolled in the Savings in the City program. 15 hotels have been benchmarked and waste reduction actions have already achieved annual savings of \$10,000 per hotel</li> </ul>	 Refer to page 67 for detail



## 9. Commonwealth Games Environmental Initiatives

# WaterWise

## Our River, Our Games

😊 *A community engagement project aimed at revegetating and restoring habitat at 17 sites along the Yarra River*

### How was the project implemented and who was involved?

As lead agent for *Our River, Our Games*, Melbourne Water collaborated with OCGC, local councils, 'friends' groups and Parks Victoria to plant trees, remove weeds, collect litter and run Waterwatch activities (water testing and habitat assessment) from the source to the end of the Yarra River (Healesville to Port Phillip Bay).

Melbourne Water contracted Conservation Volunteers Australia (CVA) to recruit and manage volunteers at each site, with the location for each site determined in collaboration with local councils and Parks Victoria.

*Our River, Our Games* commenced in Healesville on 22 August 2005 and concluded on 22 October 2005 at Herring Island, Burnley.

### What was achieved?

Across the 17 sites, a total of 41 activity days – involving various community groups from schools to large planting teams – were conducted in the following locations:

- Worawa Aboriginal College, Healesville
- Wittons Reserve, Wonga Park
- Stiggants Reserve, Warrandyte
- Eltham Lower Park, Eltham
- Banyule Flats, Heidelberg
- Chandler Billabong, Kew
- Kew Billabong, Kew
- Chandler Hwy, Kew
- Off Heidelberg Road, Fairfield
- River Retreat, Kew
- Quarries Park, Clifton Hill
- Creswick Street, and Pridmore Park, Hawthorn
- Loy's Paddock, Richmond
- Herring Island, Burnley
- Yarra River Bank, Burnley
- Westgate Park, Port Melbourne

As a result of *Our River, Our Games*:

- approximately 18,000 trees, grasses and shrubs were planted
- 80 kilograms of weeds were removed
- 320 metres of fence was repaired
- one night fauna survey was completed
- more than 200 adults and 230 students were engaged as volunteers

Feedback on the project from local councils and volunteers was very positive. A feature of this project was the involvement of many first-time volunteers.

Feedback from participants indicated they were particularly impressed by the partnership between volunteers and CVA, and believed the Waterwatch river health education activities added an extra dimension to the project.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

Site audits, recording site improvements, were conducted by CVA, Melbourne Water and OCGC. These assessed:

- activity undertaken
- site improvement
- survival rates of plantings



## WaterWise Games Village

☺ *Collecting and recycling water to reduce consumption of potable water*

### How was the project implemented and who was involved?

The design and installation of water saving initiatives at the Commonwealth Games Athletes' Village was a joint initiative of OCGC, Major Projects Victoria and the Village developer, Village Park Consortium.

Construction specifications for the Athletes' Village included: rainwater collection and storage; greywater collection, treatment and recycling; water saving bathroom, laundry and kitchen devices; and WaterWise plants in Village gardens.

### What was achieved?

Consistent with design specifications for the Village, greywater treatment and rainwater harvesting systems were installed during construction. Fixtures and fittings are now being installed as part of the Village refit in its transition to a residential precinct.

The Village now has the following water harvesting and saving features:

- 1500 litre Aquasource rainwater tanks installed in all 167 houses and 14 townhouses, with water to be used for toilet flushing and watering gardens
- 10,000 litre Rocla ecoRain rainwater tanks installed in all 10 social housing apartment buildings, with water collected to be used for toilet flushing
- high quality greywater collection, treatment and recycling system (TWMS Heal Group) installed in 51 apartments, with a capacity of 10,000 litres per day, treating water to class A standard



- through aerobic, anaerobic and UV treatment – provides enough water to cover 100% of toilet flushing needs
- AAA rated showerheads and kitchen, laundry and bathroom taps; 6/3 litre dual flush toilets and AAA rated dishwashers (currently being installed)
- landscaping incorporating drought-tolerant native trees and shrubs to minimise watering requirements

City West Water estimates the Athletes' Village WaterWise initiatives will cut potable water consumption by approximately 30% when compared to average comparable dwellings.

### Did the project achieve its aims?

The target reduction in potable water usage has not yet been met. At the time of reporting, around 25% of the eventual number of dwellings on the Village site have been constructed and water infrastructure projects for the remaining precincts are still under consideration. Of the dwellings subject to this audit, several factors influenced the rate of potable water reduction, namely the closely settled nature of the development, and probably more importantly, the constraints posed within the Heritage precinct. Notwithstanding these factors the achievements within these precincts and across the site have been significant and future infrastructure development may see further improvements in potable water usage.

### How were project achievements assessed?

The site audit confirmed the WaterWise features implemented to date: rainwater tanks, greywater treatment and planting of native plants and shrubs, and verified plans for fixtures and fittings to be installed in Village houses as part of the post-Games refit.

**City West Water estimates the Athletes' Village WaterWise initiatives will cut water usage by approximately 30% when compared to average comparable dwellings.**

## Royal Park Wetlands

😊 *Construction of wetlands in Royal Park*

### How was the project implemented and who was involved?

The Royal Park Wetlands are adjacent to the Athletes' Village, in the northwest section of Royal Park, near Manningham Street.

The wetlands were a key aspect of the Royal Park Master Plan 1998 and their creation was a key aspect of environmental planning for the Athletes' Village.

The five-hectare wetlands system was designed to be multi-functional and meet a number of objectives:

- create sustainable wildlife habitat, diversifying the park's biodiversity
- enhance recreation opportunities, including a network of walking tracks
- recycle stormwater for Royal Park golf course, sports fields, the zoo, and Athletes' Village development
- improve the quality of water discharged into Port Phillip Bay from Moonee Ponds and Royal Park creeks (Park Street main drain)

The wetlands comprises a habitat area ('treatment wetland') and storage area. The habitat area is approximately one hectare in size and contains plants that remove nutrients from water entering the wetlands from Royal Park Creek (Park Street main drain) and stormwater.

The 1.2 hectare storage area contains 12 megalitres of class A recycled water available for recycling.

### What was achieved?

Construction of the wetlands was completed in October 2005.

The wetlands were designed to treat water to class A standard through filtering and treatment in wetland vegetation and to achieve the following stormwater quality objectives:

- total suspended solids < 6mg/litre
- total phosphorus < 0.09 mg/litre
- total nitrogen < 1.3 mg/litre

The wetlands were designed to provide adequate recycled water to irrigate up to 20 hectares of public open space.

More than 140,000 plants have been planted in and around the wetlands:— 100,000 aquatic plants and 40,000 terrestrial plants.

The wetlands are expected to attract a wide range of native and non-native bird, frog, lizard, bat, tortoise, fish and other species.

The wetlands formed part of the recreation area available to athletes during the Commonwealth Games.

An extensive network of winding pathways, a wide boardwalk over the water linking pathways and a timber bird hide have been constructed around the wetlands.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

Site audits were conducted by City of Melbourne, Major Projects Victoria and OCGC.



## WaterWise Games Venues

😊 *Conserving water at venues through a series of water collection, recycling and conservation initiatives*

### How was the project implemented and who was involved?

The design of WaterWise Games venues was a joint initiative of OCGC, venue operators and venue developers, and included the following venues:

- Melbourne Sports and Aquatic Centre – Stage 2 redevelopment incorporating new outdoor pool
- Melbourne Cricket Ground – new northern stand redevelopment
- Darebin International Sports Centre – new lawn bowls centre development
- State Netball Hockey Centre – hockey pitch redevelopment.

This initiative included rainwater collection, treatment and recycling; the installation of water efficient appliances, fixtures and fittings; and landscaping using water efficient plants.

### What was achieved?

As a result of this initiative, each of the four venues now has a range of WaterWise features.

#### Melbourne Sports and Aquatic Centre

- rainwater collection system on roof over new outdoor pool
- water collection, treatment and recycling for use in toilet flushing in Stage 2 area
- underground rainwater storage of 90,000 litres, which operates in conjunction with 5000 litre head tanks
- AAA rated water efficient taps and showerheads



- waterless urinals in new facilities
- backwash water treatment and recycling systems in new pool

#### MELBOURNE CRICKET GROUND

- 1.5 megalitre rainwater tanks to collect water from roof of the new stand, which is then treated to class A standard via UV disinfection and used to wash the stand
- timer taps (Galvin) in public toilets
- landscaping, completed by City of Melbourne, using introduced and native species to reinforce existing avenues in Yarra Park (species include eucalypts [lemon-scented gum, red ironbark, red gum], she-oaks, Kauri pine, English elm and Dutch elm)

#### STATE NETBALL HOCKEY CENTRE

- water collection and recycling system to capture runoff water from pitches, which is treated through gross pollutant traps, other filters and UV treatment with chlorine dosing if required then reused (the water is used to condition hockey pitches prior to training and matches, requiring approximately 66 kL per day)
- storage tanks to hold water for use as required, which is estimated to reduce the centre's water consumption by 75%, saving an estimated 19 million litres of potable water per year

#### DAREBIN INTERNATIONAL SPORTS CENTRE

- rainwater harvesting and recycling system, with 150,000 litre storage capacity, to collect water from 5550m<sup>2</sup> of the velodrome to water bowling greens
- recycling systems in place are expected to save 19-23% of water required for bowling green irrigation; collected water is filtered through gross pollutant traps and other filters before use
- water efficient toilets (6/3 litre dual flush); showerheads and tapware
- landscaping using WaterWise indigenous and native species identified in the 'savewater plant selector', such as acacia cognate (river wattle), eucalyptus sideroxylon (pink flowered red ironbark), Correa alba (White Correa) and Carpobrotus rossii (Karkalla)

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

Site audits were undertaken to verify installation of features.



## Sing for Water

😊 *Community choirs and schools performing songs about water to raise funds for, and awareness of, clean water and sanitation projects*

### How was the project implemented and who was involved?

‘Sing for Water in Melbourne’ was a co-production of Reiser Productions and City of Melbourne as part of the Commonwealth Games Cultural Program, ‘Festival Melbourne2006’, in association with WaterAid Australia.

Sing for Water concerts for adults and children were staged in the Alexandra Gardens on Saturday 18 March as part of Festival Melbourne2006 and featured:

### 500 adults from the following 27 community choirs:

- Acafellas Choir
- Borboleta
- Brimbank Multicultural Choir
- Women of Note Choir
- Golden Fleece
- Greek Florinian Choir
- Kensington Community Choir
- La Voce Della Luna
- Living Song
- Lord Newry Singers (Carlton North Learning Centre) Mood Swing
- Multicultural Choir Footscray
- North East Chinese Choir
- Northern Voice
- Ozanam Choir (Ozanam Community Centre)
- Primo Sante
- Red Tent Singers
- Resonance Choir

- Sing Australia
- Sing Australia Hawthorn
- Sing for Water Melbourne
- Sudanese Catholic Choir
- The Chat-Warblers
- Thursday Singers (Carlton North Learning Centre)
- Timorese Choir
- Tongue and Groove
- Two Bays

### Children from the following Victorian primary schools, as part of Children Sing for Water:

Braybrook Primary, Carlton Gardens Primary, Debney Meadows Primary, Holy Rosary Primary, North Melbourne Primary, Footscray Primary, Holy Rosary, St Michael’s Primary, Mooroopna Park Primary, Port Melbourne Primary, Stonnington Primary and Yarra Primary.

### Sing for Water guest artists included:

- Paulo Almeida and the Timorese Choir
- Helen Chadwick
- Golden Fleece with Joseph Jordania, Christoph Maubach and Nino Tsitsishvili
- Paul Kelly
- Valanga Khoza
- Andrea Watson
- Sudanese Catholic Choir



### What was achieved?

Sing for Water raised more than \$55,000 for a clean water project in East Timor – a WaterAid Australia project in conjunction with Games Goodwill Partner, Plan Australia.

From 2006–2008 the project will work with six communities in Aileu District of East Timor to develop and implement local solutions to provide clean water and sanitation to communities.

Sing for Water concerts were enjoyed by 5000 spectators and featured in a range of television, radio, online and newspaper stories.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

The project report detailed outcomes of Sing for Water, including: community involvement, school choir participation and funds raised.

OCGC and City of Melbourne representatives attended the performance.

# Carbon Neutral

## Tree Planting Program

😊 *Tree planting activities across the State to offset greenhouse gas emissions from the Games and contribute other environmental benefits*

### How was the project implemented and who was involved?

Independent assessments estimated that greenhouse gas emissions resulting from Melbourne's hosting of the Games would amount to 106,872 tonnes (2003 estimate) and 103,512 (2006 estimate) tonnes of CO<sub>2</sub> equivalent.

These were conservative estimates using a 'full assessment' methodology, where all emissions associated with the Games were taken into account, and no allowance for emissions that might not occur because people were at the Games. This included such areas as travel, transport, waste, accommodation, spectators, volunteers and venue operations, for example.

On the basis of the early estimate, OCGC collaborated with the Department for Sustainability and Environment and Catchment Management Authorities to create a defensible carbon sequestration project to offset Games greenhouse gas emissions.

The project was managed by Port Phillip and Westernport Catchment Management Authority. The project manager liaised with the other four CMAs involved, local shire councils, Greening Australia, TreeProject, trail and creek management committees, Landcare groups, Parks Victoria and private landholders to create the major environmental legacy of the Games.

Tree planting to improve drainage and stabilise the landscape was also incorporated into the design of the State Mountain Bike Course at Lysterfield.

### GROWING THE TREES

Volunteer tree growers, including households and groups such as schools, scout groups and environmental organisation, coordinated by TreeProject, raised more than 26,000 seedlings for planting in Ballan as part of this project.

TreeProject recruited the growers, provided seed and propagation materials and ensured volunteer growers had the resources and capability to manage the task.

### PLANTING THE TREES

214,150 tubestock seedlings and over 137 kilograms of seed (over 10 million seeds), covering almost 450 hectares, were planted and sown at 15 locations (some multi-sites eg. Geelong) across Victoria as part of the carbon-neutral tree planting project. Planting began on 9 July 2005 at Darebin Creek and concluded in January 2006 at Amiets Track in the Otway Ranges. Species native to the specific areas were planted, including many eucalypt, acacia, banksia, melaleuca and bursaria species.

At Lysterfield, Parks Victoria, OCGC and Melbourne 2006 collaborated on project design and



management. Green Fleet, Plants of Provenance, Parks Victoria and volunteers from Nestlé and Holmesglen TAFE were involved in planting more than 26,000 plants, including ground covers, shrubs and trees.



### What was achieved?

Planting projects were completed at the following 15 locations across the State, and are expected to offset 109,000 tonnes of CO<sub>2</sub> equivalent:

- Wonthaggi Heathlands, Wonthaggi
- Community Parklands, Hamilton
- Ripley, Ceres and Inverleigh, near Geelong
- Bears Lagoon, near Serpentine and Bendigo
- Baynton-Sidonia, near Kyneton
- Swifts Creek, Tongiomunje East
- Lake Mokoan, near Benalla
- Heartlands, near Benalla
- Lake Narracan, near Yallourn North
- Darebin Creek, Thornbury and Ivanhoe
- Maffra Rail Trail, sections between Dawson, Heyfield, Tinamba, Maffra and Stratford
- Casterton (habitat of the south-eastern red tailed black cockatoo: Games mascot, Karak)
- Grow West Rowsley Valley, near Bacchus Marsh

- Werribee River, Ballan
- Amiet Track, Otway Ranges, near Lavers Hill

Site audits identified that 856,815 seedlings are now growing under the carbon neutral program, and more are expected to grow following recovery of some sites from drought, locust damage and bushfires. Additional seedlings have been planted and are growing at the Royal Park Wetlands, Lysterfield Park and along the Yarra River, taking the total number of seedlings to over 1 million.

The audit results confirmed that the plantings are sufficient to offset 108,876 tonnes of greenhouse gas emissions.

The tonnes of greenhouse gas emissions offset by planting was calculated using the National Carbon Accounting System, which tracks emissions (sources) and removals (sinks) of greenhouse gases from Australian land-based systems.

Approximately 2000 volunteers were involved. The project delivered both environmental and social benefits, producing biodiversity, streamside rehabilitation and improved habitat. In addition, the Wonthaggi site is now a direct seeding demonstration site and habitat corridor; parklands have been enhanced at Ballan and Hamilton; salinity has been mitigated at Baynton-Sidonia; and farms involved in the Heartlands planting are more sustainable as a result of erosion control and habitat creation.

Table 1 gives a detailed picture of each carbon-neutral tree planting site and outcomes.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe. Plantings are now protected by carbon agreements to ensure the long-term sequestration of carbon in the vegetation.

### How were project achievements assessed?

Audits of all sites, recording site improvements, were conducted by Greening Australia Victoria. These audits assessed:

- plant germination/survival rates, using a random quadrant sampling method identifying woody species and other plants per hectare
- species planted and consistency with ecological vegetation class benchmarks (that is, consistency with natural species mix)
- risks and risk management



**Table 1: Carbon-neutral tree planting sites and outcomes**

Location name	Location	Number of subsites	Project partners	Planted area			Carbon agreement	Volunteer planting days		Greenhouse gas offset	Key environmental outcomes	Site audits	
				Hectares	number of tubestock seedlings planted	Kilograms of seed distributed		Dates	Number of volunteers			Tonnes of CO <sub>2</sub> (at maturity) reserved for Games	B = biodiversity/habitat restoration C = carbon S = salinity P = pest control W = water quality/erosion control
<b>Wonthaggi</b>	Parks Victoria reserve on the edge of the Wonthaggi township.	2	Cape Patterson Coastal Landcare Group, Greening Australia, Parks Victoria	23	1600	46	Agreement with Parks Victoria	25-26 September 2005	85	7766	B,C,W	373070	23/01/2006
<b>Hamilton</b>	Northern area of Hamilton Community Parklands	1	Shire of Southern Grampians, Department of Sustainability and Environment	15	10950		Agreement with Shire of South Grampians	2-3 October 2005	159	4679	B,C	5785.5	9/02/2006
<b>Geelong - Ripley</b>	Ripley, Corangamite (Mennegazzo property)	1	Geelong Landcare Network	27	20000		Agreement with Landholder	13 August 2005	350	2626	B,C,W	23750	12/12/2005
<b>Geelong - Ceres</b>	Ceres, Hamilton Hwy Barrabool (Murdoch property)	1	Geelong Landcare Network	1	800		Agreement with Landholder	NA	0	123	B,C,W	4881	14/12/2005
<b>Geelong - Inverleigh</b>	Inverleigh (Pearce property)	1	Geelong Landcare Network	7	21000	7	Agreement with Landholder	N/A	0	1195	B,C,W,P	8820	14/12/2005
<b>Bear's Lagoon</b>	Bear's Lagoon, near Serpentine, north of Bendigo	1	Mr Colin Twigg and family, North Central Catchment Management Authority	12	800	10	Commonwealth Games Tree Planting Project Carbon Rights Agreement (Landholder-PPWPCMA)	9 September 2005	45	1182	B,C,S	5431.56	13/01/2006
<b>Baynton-Sidonia</b>	McHarg Range, near Kyneton	1	Landcare Australia Limited	20	60000	6	Agreement with Landholder	3 September 2005	40	5637	S, B, E	15000	31/01/2006

Location name	Location	Number of subsites	Project partners	Planted area			Carbon agreement	Volunteer planting days		Greenhouse gas offset	Key environmental outcomes	Site audits	
				Hectares	number of tubestock seedlings planted	Kilograms of seed distributed		Dates	Number of volunteers			Tonnes of CO2 (at maturity) reserved for Games	B=biodiversity/habitat restoration C=carbon S=salinity P=pest control W=water quality/erosion control
<b>Swifts Creek</b>	Tongiomonjie East, near Swifts Creek	1	Landcare Australia Limited	20	60000	6	Agreement with DPI	8 October 2005	30	8294	RY	0*	31/03/2006
<b>Lake Mokoan</b>	near Benalla	1	Landcare Australia Limited	5	12000			22 October 2005	60	0	RY	5000	9/02/2006
<b>Heartlands, Violet Town</b>	The Heartlands Project; Honeysuckle Creek catchment, west of Violet Town	8	Goulburn Broken Catchment Management Authority	54	150000	24.55	Commonwealth Games Tree Planting Project Carbon Rights Agreement (Nine Landholders-GBCMA)	6 September 2005	21	4261	B,C,S	107908	1/02/2005
<b>Lake Narracan</b>	Lake Narracan, near Sullivans Track, near Yallourn North	2	Latrobe Valley Shire, Greening Australia	4	800	5	Commonwealth Games Tree Planting Project Carbon Agreement (Council-PPWPCMA)	14 September 2005	201	1395	B,C,P,W	31880	25/11/2005
<b>Darebin Creek</b>	Darebin Creek Shared Trail – north of Darebin Road to Bell Street, Thornbury and Ivanhoe	2	Banyuel City Council, Darebin City Council, Darebin Creek Management Committee	2	1600		Commonwealth Games Tree Planting Project Carbon Agreement (Banyule Council-PPWPCMA)	9-10 July 2005	162	624	B,C,W,P	1300	5/12/2005

\*Swifts Creek site was subject to drought conditions and locust damage. The situation at this site will be reviewed at the end of Spring 2006 and the site will be resown if necessary.

Location name	Location	Number of subsites	Project partners	Planted area			Carbon agreement	Volunteer planting days		Greenhouse gas offset	Key environmental outcomes	Site audits	
				Hectares	number of tubestock seedlings planted	kilograms of seed distributed		Dates	Number of volunteers			Tonnes of CO <sub>2</sub> (at maturity) reserved for Games	B = biodiversity/habitat restoration C = carbon S = salinity P = pest control W = water quality/erosion control
<b>Gippsland Plains Rail Trail, Maffra</b>	Gippsland Plains Rail Trail – sections along trail between Dawson, Heyfield, Tinamba, Maffra and Stratford (Clydebank, Maffra and Dawson/Heyfield sites)	3	Greening Australia, Gippsland Rail Trail Incorporated	20	1600	18	Agreement with Maffra Rail Train Incorporated	1-2 October 2005	45	6386	B,C,S	105550	13/02/2006
<b>Casterton, Karak</b>	10km from Casterton township, near Corndale Tower	1	Department of Sustainability and Environment (Casterton)	10	8000		Agreement with DSE, SW region	2-4 September 2005	206	2532	B, C	8800	1/12/2005
<b>Grow West, Rowsley Valley</b>	Rowsley Valley near Bacchus Marsh, including Yaloak Estate	4	Grow West, Port Phillip and Westernport Catchment Management Authority, Department of Primary Industries, Yaloak Estate	170	136000		Section 173 Agreement between Moorabool Shire, PPWPCMA and DSE	14 August 2005	43	41177	B,C,P,W	55539	11/01/2006
<b>Ballan</b>	Werribee River, Ballan	2	Rushing Waters, Shire of Moorabool, Port Phillip and Westernport Catchment Management Authority	20	20000		Commonwealth Games Tree Planting Project (PPWPCMA-Landholder)	23-24 August, 4, 7, 13 September 2005	513	5065	B,C,W,P	22500	31/01/2006
<b>Amiet Track</b>	Otway Ranges near Lavers Hill	1	DSE – SW Region	26	78000	14.9	Agreement with DSE, SW region			15935	B,C,W	81600	7/04/2006

## Six-star Energy Rating at Athletes' Village

😊 Construction featuring design features aimed at achieving six-star energy rating for Commonwealth Games Athletes' Village houses, townhouses and apartments and reduce heating and cooling demand

### How was the project implemented and who was involved?

The design and construction of Village accommodation incorporating features to reduce heating and cooling requirements was a joint initiative of OCGC, Major Projects Victoria and the Village developer, Village Park Consortium.

Aiming for higher than the 'average' new house (1999) energy rating of 2.5 stars, and new Victorian standard of five-star, six-star energy rating is defined through software v4.05.

Energy saving features such as insulation, air leakage control, roof ventilation, window orientation and size and double glazing were all included in design specifications.

### What was achieved?

All Athletes' Village houses and townhouses have a six-star energy rating, and all apartments (currently built) are six-star average (with five-star minimum).

This has been achieved through:

- insulation – R2.0 batts and foil to walls, R3.5 batts in roofs
- air leakage controls – weatherstrips to doors and windows, exhaust fans that close when not in use, and thorough sealing around pipe



penetrations and at junctions of walls with windows and doors

- roof ventilators – to exhaust unwanted hot air from attics
- north facing windows – to allow sunlight to heat rooms in winter; windows are shaded by pergolas and overhangs to keep out summer heat
- double glazed windows – which lose half the heat of single glazed windows and reduce summer heat increases
- summer shading of windows – which is particularly useful for west facing and upper floor windows to keep out heat in summer
- appropriately sized windows – to provide views and attractive façades without heat discomfort or heat loss. Large windows allow significant heat gain in winter and heat loss in summer

The estimated savings on energy bills for a home with six-star energy rating and other energy saving features (detailed in 'Energy Efficient Athletes' Village') is \$591 per year when compared to an average home, and \$205 per year when compared to a five-star energy rating home.

When compared to an average home, 52% of these energy savings are in heating and cooling, 42% are in hot water, dishwashing and clothes washing and 6% are in lighting.

Homes with six-star energy ratings are significantly cooler in summer – particularly downstairs – and substantially warmer in winter than average houses. The six-star houses at the Village will use 71% less heating and 32% less cooling than average houses when heated and cooled under the same conditions.

### Did the project achieve its aims?

All project aims were achieved.

### How were project achievements assessed?

Site audit and inspection was conducted by an independent architect and qualified energy rater. The site audit and inspection verified that energy saving features were installed at the Village, and these provided the basis for estimated savings under normal use conditions.

## Energy Efficient Athletes' Village

☺ *Reducing energy consumption in houses, townhouses and apartments in the Athletes' Village through energy efficient design and fittings*

### How was the project implemented and who was involved?

The energy efficient design and fit-out at the Athletes' Village was a joint initiative of OCGC, Major Projects Victoria, Sustainability Victoria and the Village developer, Village Park Consortium.

Energy efficient appliances – solar hot water systems, energy efficient lighting, advanced insulation techniques, gas-fired solar-boosted hydronic heating and energy efficient gas ducted heating – were all included in Village design specifications.

### What was achieved?

The Athletes' Village has:

- solar hot water systems – for all houses (260 litre gas boosted), townhouses (Rheem Solar Loline 2 panel with 260 litre storage, gas boosted) and social housing apartments (600-2000 litre solar hot water to be used for hydronic heating and domestic hot water)
- energy efficient lighting – in all houses, including motion sensors (halogen low voltage downlights and motion activated energy saving switching in living areas, hallways and external lights)
- advanced insulation techniques including:
  - solar hot water heat trace systems to minimise heat loss from pipes – heating pipes using electricity from grid-connected solar photovoltaic panels (2.5Kw per building) to ensure hot water is maintained at temperature

- inverted wall construction to minimise heat loss/gain – zinc metal cladding on outside of concrete wall panels with insulation in between, resulting in higher thermal mass heat storage in internal concrete panels and increased internal space
- 'phase change' materials in hot water storage vessels – sealed 100 mm balls containing materials that store heat efficiently to minimise heat loss
- passive cooling by roof ventilators – exhausting unwanted hot air from attics
- gas-fired solar – boosted hydronic heating – in social housing dwellings in the non-heritage precincts
- four-star energy rating gas ducted heating in houses
- 4.5-star gas space heating in social housing townhouses
- energy efficient and solar assisted street lighting (two 40 watt BP340U grid-interactive photovoltaic panels on each street light pole, estimated to generate as much energy as is consumed by the street lights. Street lights are Pierlite T5 Greenstreet luminaire with two 14 watt fluorescent lamps)

This energy efficient housing – comprising six-star energy rating and energy efficient design and fittings – will result in estimated energy bill savings of \$591 per annum per house when compared to an average home, and \$205 per year per house when compared to a five-star home.

When compared to an average home, 52% of these energy savings are in heating and cooling, 42% are in hot water, dishwashing and clothes washing, and 6% are in lighting.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe. Note: a number of fittings were installed immediately post-Games as part of the transition from Games-time to residential accommodation.

### How were project achievements assessed?

Site audit and inspection was conducted by an independent architect and qualified energy rater. Site audit and inspection verified installation of features, and associated savings were estimated for normal use conditions.



## Green Powered Games

😊 *Games venues powered by Green Power during the Games and had renewable energy installed*

### How was the project implemented and who was involved?

The Green Powered Games initiative was jointly managed by OCGC, Origin Energy, Sustainability Victoria and Melbourne 2006.

Origin Energy joined as a Games sponsor by providing 3.7 GWh of Green Power to power 16 Games venues for the duration of the Games.

Green Power is Government-accredited clean, renewable energy, generated from sun, wind, water and waste and reduces greenhouse pollution.

In addition, a range of renewable energy generation systems were installed at venues as follows:

- Melbourne Cricket Ground – more than 200m<sup>2</sup> of grid-connected solar photovoltaic panels (multi-silicon high power modules) supplied by Origin Energy covering the Olympic Stand entry and providing additional energy for the venue
- Athletes' Village – photovoltaic panels (two 40 watt BP340U grid-interactive photovoltaic panels on each street light pole) used to assist in powering street lighting

### What was achieved?

According to a post-Games assessment of actual electricity usage:

- 1.58 GWh of electricity was used by Games venues, including the Village, during the Games. Energy consumption at the Village was accounted for over the entire month of March 2006, when

it was occupied by athletes and officials. Energy consumption data for Telstra Dome during the Games was an estimate rather than actual

- 3.7 GWh of accredited Green Power was provided to power Games venues – during set-up and Games time
- Green Power saved up to 5000 tonnes of greenhouse gas emissions, the equivalent of taking 1200 cars off the road for a year
- photovoltaic panels at the Melbourne Cricket Ground will generate up to 22 MWh of electricity each year, saving more than 500 tonnes of greenhouse gases over the life of the system. This is equivalent to powering nearly 20% of one of the light towers
- the photovoltaic panels on street lights at the Village are estimated to generate as much energy as is consumed by the street lights

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

An audit of actual Games-time energy consumption of venues was undertaken and this was cross-checked with the Green Power provided.

Site audits were conducted to confirm the installation of renewable energy systems at the Athletes' Village and Melbourne Cricket Ground.

## Energy Efficient Games Venues

😊 *Reducing energy consumption at Games venues by installing energy efficient and energy conserving features*

### How was the project implemented and who was involved?

Energy Efficient Games Venues was a joint initiative of OCGC, Sport and Recreation Victoria, venue operators and developers, and involved three major Games-related construction projects: Melbourne Sports and Aquatic Centre (MSAC) (Stage 2), Melbourne Cricket Ground northern stand redevelopment and the Athletes' Village.

The initiative sought to reduce energy consumption at Melbourne Sports and Aquatic Centre by installing:

- an 800 kWe cogeneration plant – that uses natural gas to provide electricity and heat for the venue
- solar hot water systems – to generate domestic hot water using 24 Rheem LoLine SCT Solar domestic hot water heating panels mounted at a 22 degree angle to the roof to optimise the direct solar heat collection, stored in a 5000 litre storage tank

The initiative sought to reduce energy consumption at the Melbourne Cricket Ground by installing:

- solar hot water systems – to generate hot water for non-event day usage (32 Solahart solar collector panels and Solahart heat transfer modules with four 1000 litre hot water storage tanks, servicing zones 1 and 2 of the northern stand redevelopment
- passive solar shading and energy efficient heating, cooling and ventilation
- energy efficient lighting

- motion sensors, and low energy use appliances and lighting

### What was achieved?

All energy saving features noted above have been installed at Melbourne Sports and Aquatic Centre and the Melbourne Cricket Ground.

The cogeneration plant at Melbourne Sports and Aquatic Centre will provide base load electricity to Melbourne Sports and Aquatic Centre Stage 1 during normal daily operations and recover 1100 kW of waste heat (both Stage 1 and Stage 2 areas, including the new outdoor pool). The plant reduces greenhouse gas emissions.

The solar hot water system at the Melbourne Cricket Ground can replace up to 40 kilowatts of energy. The other energy efficiency initiatives will also reduce energy consumption and enhance comfort for spectators and workforce members.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

Site audits of Melbourne Sports and Aquatic Centre and the Melbourne Cricket Ground were undertaken, and the installation of features were verified.



## Bicycle Facilities

😊 *Encouraging cycling by providing bicycle parking at key Games locations during the Games and bike storage and lanes at the Athletes' Village*

### How was the project implemented and who was involved?

OCGC and Bicycle Victoria installed temporary bicycle parking near Games venues and Live Sites. This helped meet increased demand for bike facilities due to key transport messages emphasising the need to plan travel during the Games, use public transport and minimise car use.

Temporary bicycle parking was installed at eight locations and provided parking for approximately 620 bikes.

Permanent bicycle parking was installed in the 82 social housing apartments and 25 townhouses at the Athletes' Village in Parkville. It is also planned that bicycle storage and bike lanes will be included in the retrofit of the Athletes' Village.

### What was achieved?

Depending on the location and proximity to venues, use of the bike parking ranged from an average of 30% to up to 90% capacity during the Games.

Some bike parking installed at Royal Park station and Docklands Park was relocated to high-use areas once demand patterns emerged after the Games commenced.

Permanent bicycle parking at the Athletes' Village is in place and further facilities will be added as the Village moves from a specific purpose venue to a residential area. These facilities can be used by residents once Games infrastructure is removed.

Bike paths are also planned to link the Village with Oak Street and Royal Park.

### How were project achievements assessed?

Audits of bicycle parking were done by OCGC and venue managers during the Games. These audits assessed the availability, accessibility and usage of bicycle parking, and found that:

- Melbourne Exhibition Centre was at 20-30% capacity throughout Games
- Docklands Shed 14 was at 50-90% capacity
- Alexandra Gardens, where bicycle racks were relocated from Royal Park station, was close to capacity for much of the Games, estimated at 90% capacity
- Albert Park was at 30% capacity for most of the Games
- Royal Park (Brens Drive) was 30%+ capacity
- Royal Park station was at 30-40% capacity and many cyclists parked bikes directly outside the nearby SNHC venue
- Yarra Park, which was located some distance from the MCG and other venues, reported limited use except for one day when 30 bikes were parked there
- Gosch's Paddock, which was also located some distance from venues, reported little use

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe, and bicycle racks were placed near most of the key Games venues and precincts. Those located close to venues were understandably best utilised. The proximity of bike racks to venues was determined by security requirements.

The permanent bike facilities at the Athletes' Village are an important legacy of the Games.

## Public Transport

😊 *Enhanced public transport system during the Games and access to public transport for Games ticketholders and workforce members*

### How was the project implemented and who was involved?

The Melbourne 2006 Commonwealth Games Traffic and Transport Operations were managed by OCGC in partnership with the Department of Infrastructure, Metlink and public transport operators.

In partnership with stakeholders, OCGC delivered a highly targeted media and communications campaign to inform regular commuters and Games spectators about public transport operations. The tools used included: Games website, community information guides, a comprehensive print and radio advertising campaign, spectator guides, transit posters and Metcard advertising. All were fully integrated with campaigns delivered by Metlink and transport providers.

10,000 Games workforce members and 15,000 Games volunteers were provided with free metropolitan public transport and access to discounted regional travel.

Spectators also received free public transport with a Games ticket on the day of the event on all Metcard zone 1, 2 and 3 services in Melbourne.

For regional travel, Games ticketholders, volunteers and workforce members were eligible for the \$10 return fare ticket offer on any regional V/Line service, valid for travel on the day before, day of and day after the event.

Extensive planning was undertaken for public transport operations during the Games, and the following service enhancements were implemented:

### BUSES

- 10 city bus routes were extended to run after 7pm – last buses departed the city at 12.30am (extended to 1.15am for the Opening Ceremony and 1.30am for the Closing Ceremony)
- 50 suburban bus routes were upgraded and extended on weekdays to connect with the last trains arriving in the suburbs
- spectator shuttle buses were provided to connect various venues with major transport hubs and provide accessible services for people with special needs
- Nightrider (late night bus) services extended to operate hourly on weekday nights during the Games and half-hourly on weekends and Opening and Closing Ceremony nights

### TRAINS

- increased frequency of trains after 7pm – last trains departed the city at 12.30am (extended to 1.15am for the Opening Ceremony and 1.30am for the Closing Ceremony)
- additional special services to Royal Park and across the whole network, creating a third peak to deal with crowds exiting venues after 10pm

### TRAMS

- increased frequency after 7pm – last trams departed the city at 12.30am (extended to 1.15am for the Opening Ceremony and 1.30am for the Closing Ceremony)
- additional special services to deal with crowds exiting venues after 10pm

### REGIONAL

- V/Line operated additional regional trains and coaches, tailored to meet the expected demand on various days

### What was achieved?

As a result of the Commonwealth Games Traffic and Transport Management Plans:

- an average of 75% of people travelled to the Games on public transport – an estimated average of 150,000 extra people per day, in addition to regular public transport passengers (Metlink surveys)
- an estimated 60% of Festival Melbourne 2006 spectators used public transport to attend festival activities
- on 23 March 2006, 80% of people who went to Games events at the MCG came by public transport – almost three times the proportion for an AFL Grand Final
- Over 30,000 extra trains, trams and bus services were in operation, most after 7pm – train (3000), tram (12,500) and bus (14,500)
- there was a 40% increase in calls to Metlink's call centre, with most people seeking information to assist them in planning journeys during the Games
- 90% of public transport patrons surveyed during the Games rated the service either good or excellent (Metlink surveys)
- 87% of general public surveyed felt that the public transport system coped well during the Games (in surveys commissioned by OCGC)
- Metlink surveys indicated that the internet and press were the major source of transport information for visitors to the Games
- the State Government, Metlink and public transport operators are now focusing on how to apply lessons learnt from the Games into building a stronger system for every day

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

An audit of additional services was provided and surveys were conducted during the Games.

## Games Vehicles

😊 *Demonstrate vehicle efficiency by incorporating a range of fuel-efficient vehicles into the Games fleet*

### How was the project implemented and who was involved?

Toyota was an Official Partner of the Melbourne 2006 Commonwealth Games and provided approximately 1500 vehicles for the Games vehicle fleet including the following makes:

- Camry
- Avensis
- Coaster
- Commuter
- Corolla
- Echo
- Hiace
- Hilux
- Kluger
- Landcruiser
- Prius
- Tarago

Approximately 60% of the Games fleet were Victorian-made Camrys, with an average fuel consumption (measured under standard test conditions) of 9 to 10 litres per 100 kilometres. The next most commonly used vehicle was the Corolla, which comprised approximately 15% of the fleet and has an average fuel consumption of 7.4 litres per 100 kilometres. The fleet also included 50 fuel-efficient hybrid Prius vehicles, with an average fuel consumption of 4.4 litres per 100 kilometres.

### What was achieved?

The vehicles were used for transporting Games officials, athletes and VIPs, and used for workforce operations, equipment transport, Road Events and the 21,500 kilometre Australian leg of the Melbourne 2006 Queen's Baton Relay.

The vehicles travelled an average of 57 kilometres per day for 40 days during their use as Games vehicles.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

Data on the usage of fleet vehicles during Games time was provided post-Games.

Standard vehicle fuel consumptions were drawn from the Government's *Green Vehicle Guide*.



## TravelSmart

😊 *Encourage people living and working near Games venues and in the central business district to walk, cycle and use public transport in the period leading up to, during and beyond the Games*

### How was the project implemented and who was involved?

TravelSmart is an ongoing joint initiative of OCGC and the Department of Infrastructure.

TravelSmart programs linked to the Games were developed to capitalise on the expected high volume of people walking, cycling and using public transport during the Games to build a legacy of travel behaviour change that would persist after the event.

Two Games TravelSmart programs were developed: one targeting communities immediately surrounding the three major Games venues, and one targeting up to 50 large workplaces within the CBD.

'TravelSmart Communities' targeted 10,000 households surrounding key Games venues – MCG, Telstra Dome and the Melbourne Sports and Aquatic Centre (covering parts of Albert Park, Middle Park, South Melbourne, St Kilda West, East Melbourne, Richmond, Cremorne, and Docklands). The program was designed, through provision of information and incentives, to encourage residents to walk or cycle to Games events and use all forms of sustainable transport for other trips, and involved the following activities:

- identifying target project areas around Games venues

- collating addresses for project area households via local governments (cities of Melbourne, Port Phillip and Yarra)
- conducting a pre-project survey of target households to estimate existing travel behaviour
- conducting a direct mail campaign to announce the travel behaviour change project to target areas
- determining the type of travel information required, by project contractor making initial contact with households
- following-up contacts to maximise participation, by project contractor
- providing requested travel information/products to households
- conducting a pre-Games mail-out about travel to Games events
- conducting a post-project survey of households to determine degree of travel behaviour change and an analysis of results

‘TravelSmart Workplaces’ was implemented in partnership with City of Melbourne, and targeted CBD workplaces with more than 100 staff, and involved the following activities:

- developing a target list of employers in cooperation with the City of Melbourne
- TravelSmart project officers recruiting employers
- conducting meetings with prospective TravelSmart Workplaces employers
- conducting baseline travel surveys of employees, by Travel Smart Workplace employers
- analysing survey results and reporting to employers, by project officers
- conducting follow-up meetings with employers to outline survey results and detail next steps
- drawing up draft Green Transport Plans for employers, by project officers
- securing internal approval of workplace’s Green Transport Plan, facilitated by employer representative

- enacting Green Transport Plan actions to increase walking and cycling to work
- conducting a second round of surveys (September/October 2006) to measure the degree of travel behaviour change following implementation of Green Transport Plan



### What was achieved?

The Games TravelSmart program resulted in:

#### WORKPLACES

- 10,694 employees in 37 workplaces were engaged through TravelSmart Workplaces
- all 37 workplaces involved in the program completed staff travel surveys
- Green Transport Plans were completed for 11 workplaces, and another 14 workplaces developed draft plans, with the remainder to commence in 2006
- 285 employees participated in WalkSmart
- 215 employees participated in CycleSmart

- post-project travel behaviour change surveys are scheduled for September/October 2006

#### COMMUNITIES

- 9929 households were selected to participate
- 3216 households elected to participate in the program (32% program take-up)
- the main findings from the post-project travel behaviour change surveys were a significant increase in cycling trips (4% to 7.5%) and an increase in public transport travel and a decrease in private car trips
- of those people who went to a Commonwealth Games event, 67% walked, 5% cycled and 23% used public transport. Less than 2% drove alone

#### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

#### How were project achievements assessed?

Pre-project and post-project surveys were undertaken with participants to assess behaviour change.

“Of those people who went to a Commonwealth Games event, 67% walked, 5% cycled and 23% used public transport. Less than 2% drove alone.”

# Low Waste

## Games Recycling: Waste Minimisation

😊 *Minimising waste by implementing an effective Games waste minimisation system covering packaging, merchandisers, Games suppliers and venue fit-outs, and demonstrating how to reduce waste at a major event*

### How was the project implemented and who was involved?

Games Recycling: Waste Minimisation was a partnership between OCGC, M2006 and Sustainability Victoria, and implemented a range of initiatives to minimise waste and demonstrate a 'low waste event', including:

- adopting widespread public and back-of-house recycling procedures
- using bin caps and signage to identify recycling bins
- installing permanent recycling in public places, major tourist and recreation sites and Games venues
- implementing packaging guidelines
- conducting WasteWise Catering training for catering companies
- using reusable crockery and cutlery
- reviewing packaging used by Games merchandisers

- obtaining WasteWise certification
- encouraging local councils to minimise waste and maximise recycling at their Games-related activities, including 'Warming Up for the Games' and 'Queen's Baton Relay' events
- reusing overlay materials at the Games
- effectively communicating information regarding waste minimisation and recycling

### What was achieved?

As a result of the collaboration:

- a successful public and back-of-house recycling program was implemented at Games venues and Public Domain areas (refer previous summary)
- 1900 bins caps were provided to identify waste and recycling streams – some obtained from existing sources; 690 were procured by OCGC and M2006 specifically for the Games (purchased by Sustainability Victoria at the end of the Games for use at future events)
- Games Recycling signage was developed consistent with Australian Standard colours for waste streams, and symbols used met Sustainability Victoria's *Guidelines for Public Places and Events*.
- Sustainability Victoria Public Place Recycling Grants funded 18 projects to install permanent public place recycling at various major sporting and recreation sites
- Games packaging guidelines were developed and applied to catering contractors, merchandise concessionaires, sponsors and other suppliers of goods and services – guidelines specified that all packaging and disposable materials used should be recyclable and suitable for processing in Victoria; to confirm compliance, contractors were required to submit packaging for verification prior to the Games
- WasteWise Catering training was delivered to five major catering companies and Restaurant Catering Australia

- reusable cutlery was used at the Athletes' Village and most Games corporate catering venues; reusable crockery was used at most Games corporate catering venues and approximately 200,000 meals at the Games were served using reusable crockery
- 90% (by value) of Games temporary equipment, infrastructure and overlay was hired. Of the remainder, approximately 1% will be disposed of via public tenders and auctions

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

Sustainability Victoria will use the learnings from the Games to extend its *WasteWise Events Toolkit*.

### How were project achievements assessed?

Games-time site audits examined waste and recycling, litter and waste infrastructure (for example, bins).

Participants in the WasteWise Catering training were surveyed and their feedback was collated.



## Games Recycling: Public Areas and Back-of-House

😊 *Implementing an effective recycling system for public (front-of-house) and back-of-house operations at all Games venues and precincts*

### How was the project implemented and who was involved?

Games Recycling – Public Areas and Back-of-House was a joint initiative of the Office of Commonwealth Games Coordination (OCGC), Melbourne 2006 Commonwealth Games Corporation (M2006) and City of Melbourne.

M2006 provided waste and recycling services at venues, OCGC provided waste and recycling services at public Games management areas and City of Melbourne provided waste and recycling services in public areas within the City of Melbourne as follows.

#### OCGC

- Provided a two-bin waste-stream system in public areas – one for co-mingled recyclables; one general waste. Substantial quantities of 240 litre bins were provided to complement existing stocks of public bins. Bin caps identified the bins' recycling status (yellow for co-mingled recycling; red for general waste) with recycling information signage appearing in public domain areas, consistent with that used across the Games.
- In some instances, services providers were engaged directly by OCGC. In other instances, services providers were engaged by venues or councils, often as extensions to existing contracts. Where service providers were directly engaged by OCGC, specifications included:

- services required – specifying two-bin front of house system, with each bin location to include both recycling and general waste bins
- categories of recyclables to be collected in the recyclables stream – recyclable packaging and containers including PET, HDPE plastic containers, aluminium and steel cans, cardboard and glass
- reporting of waste tonnage in total and by waste stream for every area throughout the Games period.

#### MELBOURNE 2006

- Provided waste services at all venues, either via contracting service providers directly (Collex) or via arrangements with venues that engaged incumbent or other service providers.
- Supplied more than 3000 x 240 litre bins to all venues. The majority of venues used existing infrastructure with some enhancement.
- Implemented the two-bin system consistently across most venues. Some venues (including Rod Laver Arena and the Multi-Purpose Venue) utilised existing systems – a single bin front-of-house collection, with back-of-house separation of recyclables).
- Games venues controlled by Melbourne 2006 aimed to recycle 70% of waste.

#### CITY OF MELBOURNE

- Provided front-of-house collection of co-mingled recyclables (paper, bottles and cans) and general waste.
- Provided back-of-house collection of co-mingled recyclables (paper, bottles and cans) and food organics and general waste at service hubs.
- Installed 41 additional recycling bins in public locations (with support from Sustainability Victoria).
- Enhanced separation of waste using dual waste and recycling bins and clear, concise signage.

Other providers were involved in providing services in regional Victoria and some venues.

### What was achieved?

Prior to the event, it was estimated that approximately 1600 tonnes of waste would be generated at Games venues (based on quantities from previous Games).

Games venues (including the Athletes' Village) generated 589 tonnes of waste during the event period, and achieved a recycling rate of 57% (by weight): 14% cardboard, 24% co-mingled recyclables, 14% organic bio-waste and 5% glass (including front-of-house and back-of-house areas).

The Athletes' Village achieved 60% recycling: 12% cardboard, 9% co-mingled recyclables, 38% organic bio-waste and 1% glass. The MCG achieved 59% recycling: 13% cardboard, 36% co-mingled recyclables, 2% organic bio-waste, 7% glass.

OCGC's Public Domain Waste Management Program was implemented in collaboration with venue owners and local councils, and achieved a 26% (by weight) recycling rate: 17% co-mingled recycling (bottles, cans etc.) and 6% cardboard. Some smaller sites and Public Domain areas did not capture data on waste and recycling.

The City of Melbourne collected 26 tonnes of recyclables (52%), 21 tonnes of general waste (42%) and three tonnes of food organics (6%), achieving an overall recycling rate (by weight) of 58%. Contamination rates were less than 10%.

The City of Melbourne believed back-of-house recycling, especially management of food organics stream, required ongoing support from its staff and the contractor in minimising contaminated loads and ensuring any visibly contaminated food waste material was not permitted to contaminate whole loads.

Where waste service providers were directly engaged by Games organisers or City of Melbourne, specifications regarding recycling and service levels were achieved. However, where service providers were engaged by third parties, they were often not involved in planning and were consequently less aware of Games waste specifications and standards.

179 tonnes of waste was generated during pre-Games fit-outs ('bump-in') and post-Games dismantling ('bump-out', where spectator recycling was not in place.

### Did the project achieve its aims?

There were a number of initiatives that contributed to a reduction in the total volume of waste produced during the Games. These included packaging guidelines for suppliers, the WasteWise Catering initiative for catering staff, management of packaging associated with merchandise and other waste-related initiatives. The effect of these initiatives in reducing the total volume of waste produced may have also reduced the potential for recycling the waste that remained.

Project aims were partially achieved within the defined timeframe. While the recycling rate for venues (70%) was not met, substantially less than predicted waste was generated overall and significant recycling was achieved.

### How were project achievements assessed?

Site audits were undertaken in the lead-up to and during the Games. Audits reviewed front-of-house and back-of-house waste management systems and user behaviours.

## Street cleaning and graffiti removal

😊 *Enhancing litter and waste collection, cleaning streets and removing graffiti*

### How was the project implemented and who was involved?

Games recycling: Clean Streets and Remove Graffiti was a joint initiative of OCGC and City of Melbourne.

Between 10 and 30 March 2006, enhanced street sweeping and litter collection services were provided across the City of Melbourne in the CBD and areas surrounding Games venues. During this period, an enhanced program of high pressure cleaning was used to remove stains and chewing gum from footpaths, and the council deployed graffiti removal services.

### What was achieved?

This initiative resulted in the collection of:

- 218.5 tonnes of litter from street sweepings
- 83 tonnes of litter from bins
- 20 tonnes of rubbish from illegal dumpings in city footpaths, laneways and other council areas

The enhanced footpath cleaning program resulted in the cleaning of 5800 m<sup>2</sup> of footpath.

The graffiti removal services resulted in the cleaning of 5300 m<sup>2</sup> of surfaces immediately before and during the Games.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

Activity assessments were conducted to identify outcomes. A Games-time survey of interstate and international visitors commissioned by City of Melbourne found that 98% believed the city was well presented. One respondent commented that they felt Melbourne was 'spotless'.



“A Games-time survey of interstate and international visitors commissioned by City of Melbourne found that 98% believed the city was well presented. One respondent commented that they felt Melbourne was ‘spotless’.”

## Litter Barge

😊 *Improving the Yarra and Maribyrnong rivers by trapping and removing litter*

### How was the project implemented and who was involved?

The litter barge project was a joint initiative of OCGC and Parks Victoria, the waterways manager.

Starting with the multi-purpose crane barge 'Pelican' in August 2004 and the smaller catamaran 'Silver Gull', in January 2006, this project resulted in the collection and removal of more than 2800 m<sup>3</sup> of litter from the Yarra and Maribyrnong rivers.

Pelican was designed and developed in consultation with Parks Victoria's asset management and operational staff to ensure it met litter management standards. Silver Gull was an 'off-the-shelf' purchase, requiring only minor modifications to meet local conditions.

Generally operating seven days a week, Pelican had a litter basket collection capacity of 2.8 m<sup>3</sup>, while Silver Gull was able to collect 0.75 m<sup>3</sup> of litter in each load.

### What was achieved?

Pelican collected 2700 m<sup>3</sup> of litter between its launch in August 2004 and the end of March 2006 (an average of 135 m<sup>3</sup> per month). This is equivalent to 11,000 large wheelie bins.

Material collected comprised 37% litter (rubbish, plastic bags, etc.), 45% debris (sticks and leaves) and 18% trees branches.

Silver Gull collected 138 m<sup>3</sup> of litter from the banks of the Yarra River between 13 February and 3 April 2006. Approximately 63% of material collected by

the catamaran was litter; the remainder was trees and branches.

In addition to the Games-time litter collection, Melbourne rivers will now continue to be cleaned by the barge and catamaran every day – leaving an important low-waste Games legacy. The structural quality of the barge is very high, and is a major asset with a 25 – 30 year lifespan.

As a purpose-built barge, Pelican is manoeuvrable, fast, has a large capacity, and is a very efficient and effective means of cleaning the river.

### Did the project achieve its aims?

This project achieved its aim of improving the health of the rivers by increased litter trapping and collection.

The new litter collection vessels significantly improve the effectiveness and efficiency of litter management on the waterways, and represent continuing environmental benefits and legacies of the Games.

### How were project achievements assessed?

The barges were observed in operation in the lead-up to and during the Games, and audits of litter types and quantities were conducted by Parks Victoria.



## Public Litter Clean-Up Days

😊 *Involving the community in cleaning up across the State prior to the Games*

### How was the project implemented and who was involved?

OCGC, Sustainability Victoria, Clean Up Australia (CUA) and local councils collaborated to clean up local areas in preparation for the Games and Games-related activities (in particular the Queen's Baton Relay).

CUA managed the clean-up of sites, encouraged council involvement, produced promotional materials and provided support and advice on successfully running clean-up activities.



Three key messages were incorporated into the clean-up campaign:

- Victoria is cleaning up in readiness for the Games
- councils can register an official Commonwealth Games Clean-Up site managed by CUA
- it's easy, fun and everyone can take part.

These messages were derived from the project objectives of increasing community participation in clean-up activities and generating environmental benefits. Clean-Up days occurred in February and March 2006.

### What was achieved?

Forty-nine local government areas were involved in 81 Clean-Up Days. More than 4300 local volunteers were involved, and approximately 97 tonnes of litter was collected.

Volunteers included school students and staff and local business people, waste management and community groups.

Beaches, parks, bushland, river and creek banks, school grounds and shopping malls were covered by sites registered for the project.

The most common types of litter collected were cigarette butts, drink bottles and aluminium cans.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

The public litter clean-up achievements were assessed by CUA, and participants provided feedback on their involvement. Feedback from site coordinators was positive and demonstrated that the project was a worthwhile experience for the community and the environment.



**“Forty-nine local government areas were involved in 81 Clean-Up Days. More than 4300 local volunteers were involved, and approximately 97 tonnes of litter was collected.”**

## Anti-Litter Campaign

😊 Reducing litter and changing littering behaviour by conducting an anti-litter campaign in the lead-up to, during and after the Games

### How was the project implemented and who was involved?

The Anti-Litter Campaign was a joint initiative of Sustainability Victoria and OCGC, in partnership with the Victorian Litter Action Alliance. Sustainability Victoria convened a stakeholder committee, which met regularly to review progress on the campaign and plan its implementation.

The campaign comprised television, radio, print and outdoor advertising using key anti-litter messages linked to sport and the Games. The pre-Games ‘Let’s start training for the Games’ campaign component was managed by Sustainability Victoria. OCGC managed the Games-time and post-Games components, which urged Victorians to ‘Clean up at the Games’ and ‘Keep up the good work’ respectively.

The campaign was rolled out as follows:

- Phase I (October 2005) – campaign launched, with supporting public relations (PR) activity during Zero Waste Week
- Phase II (November 2005 – January 2006) – ‘Let’s start training for the Games’ TV and outdoor advertising appeared in the lead-up to the Games; PR activity continued and radio advertising was introduced
- Phase III (February 2006) – ‘Litter Free Month’ with continued TV and outdoor advertising campaigns and PR

- Phase IV – ‘Let’s clean up at the Games’ Games time anti-litter outdoor and transit advertising campaign
- Phase V – ‘Let’s keep up the good work’ post Games outdoor advertising

### What was achieved?

Littering was remarkably absent during the Games. Litter monitoring showed that in almost all 1278 observations recorded, less than 10% involved people littering. This is the lowest littering rate ever recorded during a Clean Communities Assessment Tool (CCAT) study.

Compared to baseline data previously collected by Victorian Litter Action Alliance, there were significant reductions in littering behaviour in matched locations. Littering behaviour was well below the State average recorded in the *Victorian Litter Report 2005* (VLR2005).

These outcomes were the result of:

- a very successful, integrated advertising campaign featuring messages that captured attention and provided a sequence of consistent images
- successfully engaging stakeholders throughout the campaign, including 16 Regional Waste Management Groups, Clean Up Australia and cities of Melbourne, Port Phillip and other local councils (47% of local councils, the Regional Waste Management Groups and six environmental/community groups across Victoria participated in the campaign by using campaign materials, holding clean-up events and/or arranging media coverage of clean-ups)

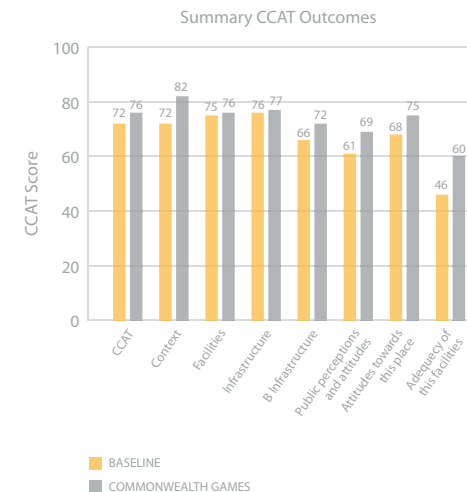
### LITTER BEHAVIOUR

Surveys undertaken during the Games identified that 77% of those in Games locations were satisfied

with the management of litter during the Games – a marked improvement from the 44% baseline data.

As shown in the graph below, bin use was generally excellent, with only 13% of behavioural observations showing incorrect disposals and a minimum loss of recyclable resources in garbage bins of 14%.

Graph 1: Bin use and littering



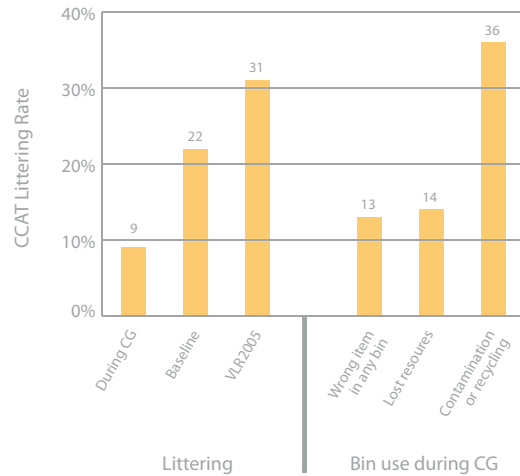
Compared to baseline, during peak times Games locations remained generally clean. The average number of littered items at Games locations showed a small decline from baseline (49) compared to during the Games (47). Across Victoria in 2005, the average number of items was 66. During the Games, littered items were often left on top of flat surfaces or close to bins.

As shown in graph 2, all CCAT indicators were more positive during the Games than at baseline, with particular improvements evident in:

- cleaner locations
- community belonging and identity

- BIN infrastructure to contain and control litter and capture recyclables
- community sense of place and attitudes to the locations
- community perceptions of the adequacy of litter cigarette and recycling bin facilities, which improved greatly during the Games

**Graph 2: Summary of CCAT Outcomes**



### ADVERTISING CAMPAIGN

Of those surveyed about the Games litter campaign, 49% were able to recall the campaign, with the majority (56%) able to do so unprompted. 56% were aware of the TV advertising, 1% for radio, 16% for billboards, 8% for transport, 2% for newspaper.

Survey respondents were also asked about campaign messages: 31% thought the messages would stop littering; 80%, that messages were clear; 57%, that they would improve awareness; 39%, that they were likely to be recalled; 87%, that they should be continued; 14%, that the messages had changed their attitudes to littering; and 35%, that in the long term they will change people's behaviour.



### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

The anti-litter campaign was comprehensively evaluated.

Pre-Games baseline data on litter behaviour for 30 locations (around Melbourne, Geelong, City of Port Phillip, City of Yarra and Latrobe Valley) was collected then followed up by Games-time surveys and studies at Commonwealth Games locations. Reactions and responses to the advertising campaign were also gathered through face-to-face interviews in Commonwealth Games locations.

## Litter Trapping

😊 Reducing litter in the Yarra River and along St Kilda Beach by upgrading litter traps in stormwater outlets

### How was the project implemented and who was involved?

Melbourne Water, City of Port Phillip and City of Melbourne planned to upgrade and install new litter traps in stormwater drains entering the Yarra River and St Kilda Beach areas.

City of Melbourne installed litter traps in stormwater drains throughout the municipality. The traps were designed to prevent litter entering the Yarra River, Moonee Ponds Creek and Maribyrnong River.

Melbourne Water identified Prahran Main Drain as a primary source of litter to the Lower Yarra. Sustainability Victoria and Melbourne Water formed a partnership to design and build a litter trap where Prahran Main Drain enters the Yarra.

City of Port Phillip installed litter traps in stormwater pipes that outlet directly to the Yarra River and Port Phillip Bay.

### What was achieved?

Litter traps were installed to prevent litter entering the Yarra River and Port Phillip Bay.

City of Melbourne installed one gross pollutant trap (Ecosol RSF 4450 Solid Pollutant Filter/Oil and Grease Arrestor) in November 2005 to protect the Yarra River – in Yarra Park adjacent to Brunton Avenue, downstream from the MCG. This litter trap is predicted to capture 800 kilograms of litter annually, and will complement City of Melbourne's existing litter traps.

Prahran Main Drain litter trap is currently in the final stages of design; final modelling is being conducted to ensure the trap does not adversely affect flood levels upstream. Construction of the litter trap is anticipated to begin in late 2006.

In 2005 – 2006, City of Port Phillip installed gross pollutant traps in Clarendon Street, Ferrars Street and Napier Street (South Melbourne) to prevent litter entering the Yarra River.

In 2005 – 2006, City of Port Phillip installed a range of litter traps designed to prevent litter reaching Port Phillip Bay, including traps in Edwards Park (Port Melbourne), Foam Street and Wave Street (Elwood) and Carlisle Street (St Kilda). These prevent litter from reaching Port Melbourne, Elwood and St Kilda foreshores and Port Phillip Bay.

#### **Did the project achieve its aims?**

All project aims were achieved within the defined timeframe.

#### **How were project achievements assessed?**

Advice was received from councils and Melbourne Water.

## **Recycling Construction and Demolition Waste**

😊 *Reducing waste from Games construction projects through recycling activities or reusing construction and demolition waste*

#### **How was the project implemented and who was involved?**

Sustainability Victoria, OCGC and construction contractors were all involved in this project to recycle 95% of construction and demolition waste from key Games construction projects – the Athletes' Village, Melbourne Cricket Ground and Melbourne Sports and Aquatic Centre.

Systems were put in place with contractors and construction companies to minimise waste and maximise recycling via the implementation of waste minimisation and environmental management plans at all three sites.

#### **What was achieved?**

Overall, 89% of construction and demolition waste was diverted for reuse or recycling across the three key Games construction projects.

At the Melbourne Cricket Ground, 89% (by weight) of construction and demolition waste was recycled (mostly concrete, bricks and soil).

At Melbourne Sports and Aquatic Centre, 73% (by weight) of construction and demolition waste was recycled (mostly concrete, bricks and steel).

At the Athletes' Village, 97% of construction and demolition waste (by weight) was recycled (mostly soil, concrete, bricks and asphalt).

Overall, 76% of waste at the three sites comprised concrete, bricks and asphalt; the majority of which was recycled.

#### **Did the project achieve its aims?**

The project aims were partially achieved within the defined timeframe. The recycling rate achieved was very close to the target and is in excess of the recycling rate achieved for other major construction projects.

An important outcome of this project was that major construction companies involved in Games infrastructure projects incorporated waste minimisation planning into their projects, for example, Grocon, which rebuilt the Melbourne Cricket Ground, is now using these waste minimisation techniques at its AXA construction site at 750 Collins Street, Melbourne.

#### **How were project achievements assessed?**

Site audits were conducted at the Village, Melbourne Cricket Ground and Melbourne Sports and Aquatic Centre by Sustainability Victoria. Waste and recycling data provided by contractors was audited and disposal channels were verified with deposit sites (recyclers and landfills).

## Environmentally Preferable Construction Materials

😊 Use environmentally preferable materials, including plantation timbers and recycled steel

### How was the project implemented and who was involved?

Infrastructure projects at the Athletes' Village, MCG and Melbourne Sports and Aquatic Centre (MSAC) incorporated a range of environmentally preferable construction elements, including:

- ozone-friendly refrigeration and air-conditioning units
- reused construction and demolition waste onsite, including significant reuse of clean topsoil and concrete/aggregate for road base and hard stand areas
- mulching of vegetation and provision to nurseries
- recycled steel in steel reinforcing applications
- plantation timber for flooring and framing throughout the new stand redevelopment at the MCG
- plantation timber for most uses at the Athletes' Village, from framing and decking to access ramps (only exception was in restoration of heritage buildings where timber was chosen to match existing timbers)

### What was achieved?

A range of environmentally preferable materials were used in key Games infrastructure projects at the Athletes' Village, MCG and MSAC.

### Did the project achieve its aims?

Project aims were partially achieved within the defined timeframe. While there is evidence of use,



quantities of environmentally preferable materials used were not able to be determined.

### How were project achievements assessed?

Site audits were conducted by OCGC, Major Projects Victoria and Sport and Recreation Victoria and confirmed the use of environmentally preferable construction materials.

## Temporary Equipment, Infrastructure and Overlay

😊 Minimising disposal of temporary equipment and infrastructure by hiring materials and equipment

### How was the project implemented and who was involved?

OCGC and M2006 collaborated to ensure that the significant amount of temporary equipment, infrastructure and overlay needed for the Commonwealth Games was hired and then reused, including:

- structures, tents, floor coverings and partitions
- floor protection
- portable buildings, fencing, barricades
- field of play lighting
- rigging
- scaffolding
- audio systems
- electrical and general lighting
- heating, ventilation, air-conditioning
- temporary seating

### What was achieved?

90% (by value) of temporary equipment, infrastructure and overlay used for the Games was hired; the remainder was purchased. Purchased items included single use items (for example, generator fuel) and items purchased under buy-back arrangements (for example, some electrical and lighting equipment).

Approximately 1% (by value) of equipment, overlay and infrastructure used for the Games was purchased outright and will be disposed of via public tenders/auctions.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

An audit of the Games inventory management system showed whether items were purchased or hired, where they were purchased and what disposal pathway was used (returned to hiring companies or sold).

“OCGC and M2006 collaborated to ensure that the significant amount of temporary equipment, infrastructure and overlay needed for the Commonwealth Games was hired and then reused.”

## Reusing Sports Equipment

😊 *Distributing sports equipment used at the Games among clubs and associations across Victoria*

### How was the project implemented and who was involved?

An estimated 2500 items of sporting equipment were purchased or leased for the Melbourne 2006 Commonwealth Games.

The Victorian Government determined that the equipment purchased would be distributed to appropriate State and community-based sporting clubs for use by:

- local communities where sports participation levels could be improved through access to Games equipment
- major sporting events and State Training Centres to support elite athlete development

The equipment available for distribution includes field event throwing equipment such as discuses, javelins and hammers; judges flags; pole vault bars; basketballs; bicycle stands; landing mats; hurdles; relay batons and goggles.

### What was achieved?

The equipment was collected and audited, and a list of available equipment was created. Most equipment will be distributed by the end of 2006.

Some equipment has already been distributed. Lawn bowls equipment was distributed to the State Lawn Bowls Centre in Darebin to be used for its hosting of national championships and by local club bowlers. Shooting equipment was distributed to Melbourne International Shooting Club for its national event held in April 2006 and Victorian

Amateur Pistol Association for distribution to needy clubs in rural and regional Victoria.

### Did the project achieve its aims?

Project aims were partially achieved within the defined timeframe, but further activity is required.

Around 80% of the equipment has been distributed to date with the remaining 20% currently being distributed.

### How were project achievements assessed?

An audit of equipment was undertaken and a list of identified equipment to be distributed is available.

# Games Systems and Processes

## Environmental Management Plans

😊 *Developing and implementing Environmental Management Plans (EMPs) for Games venue operations and key Games construction projects*

### How was the project implemented and who was involved?

Construction EMPs were developed and implemented by construction companies at key Games construction projects: Games Village, MCG, Melbourne Sports and Aquatic Centre and State Mountain Bike Course (SMBC).

Construction EMPs covered:

- site preparation
- materials selection
- landscape
- sustainable energy
- waste minimisation
- integrated water management
- stormwater quality.

In particular, the Lysterfield Environmental Management Plan guided the design and construction of the Lysterfield Park mountain bike course. The SMBC (construction) EMP identified the

environmental values of the park and steps required to maintain these. Aiming for an environmentally sustainable outcome in a significant conservation and recreation area, the plan highlighted the need for low maintenance arrangements, a durable course surface and modification of the course loop to avoid (and protect) environmentally sensitive areas.

Venue operational EMPs were developed by the Environment Protection Authority (EPA) in conjunction with Melbourne 2006, and were designed to integrate with venue management systems. Venue EMPs covered the legislated environmental protection requirements for venues (for example, management of chemicals) as well as additional environmental components (for example, recycling) as follows:

- venue management
- venue services
- retail catering
- grass and garden management
- administration
- venue-specific requirements such as the disposal of artillery from shooting venues.

Venue managers completed a pre-Games environmental checklist to identify environmental issues and confirm plans were in place to manage any issues arising, such as ensuring that chemicals were stored correctly, appropriate recycling bins were in place and appropriate irrigation procedures were in place.

### What was achieved?

Construction Environmental Management Plans were implemented at key construction projects. Construction managers reported regularly on environmental issues, activities and incidents. Environmental issues were addressed within the framework of the construction EMP.

The SMBC EMP – and subsequent construction – also matched Parks Victoria’s sustainability and risk minimisation objectives as the ongoing land manager of the course. Initially a 14 kilometre loop was planned for the course. Based on the Environmental Management Plan, this was modified to a 6.3 kilometre loop.

Venue Environmental Management Plans were implemented at all venues and pre-Games checks were completed for all venues. Plans were put in place to manage environmental impacts prior to the Games. No venue reported any non-compliance with environmental aspects outlined in the checklist and no critical environmental issues were reported from a venue operations perspective.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe. To ensure lasting benefits, venues should be encouraged to adopt venue Environmental Management Plans as part of their regular operations.

### How were project achievements assessed?

Audits of all sites were undertaken and copies of completed venue EMP checklists were reviewed.

The site audit of SMBC during the Games demonstrated that environmental requirements had been incorporated into the mountain bike course design, and that the site had handled the demands of a major event well.

## Environmental Procurement Guidelines

😊 *Minimising environmental impact of the Games through sound purchasing*

### How was the project implemented and who was involved?

OCGC and Melbourne 2006 jointly planned this initiative to develop and implement environmental procurement guidelines for Games contractors and suppliers.

In 2003 an Environmental Procurement Taskforce was established to develop the guidelines, comprising representatives from:

- Department of Sustainability and Environment
- Department of Treasury and Finance
- EcoRecycle Victoria (now Sustainability Victoria)
- Environment Protection Authority
- Melbourne 2006 Commonwealth Games Corporation
- Office of Commonwealth Games Coordination (OCGC)
- Sustainable Energy Authority (now Sustainability Victoria)



Environmental Guidelines were developed and approved in October 2004 and environment-related specifications were included in M2006 tender documentation. The Catering Request for Proposal included reference to packaging specifications.

### What was achieved?

Environmental Procurement Guidelines were implemented for almost all Melbourne 2006 'Requests for Proposal' (RFPs). The RFPs covered all Games procurement where expenditure or risk profile were considered significant.

When submitting a tender or proposal, tenderers were required to submit information about their organisation's:

- compliance with relevant legislation and regulations
- environmental policies and plans and evidence of their implementation
- implemented environmental practices and products, and how their processes or goods and services demonstrate a commitment and capacity to deliver positive environmental outcomes

Prior to submitting their tender, tenderers were also provided with information and suggestions for environmental improvement.

A tenderer's environment response was then assessed and a rating added to the procurement assessment matrix, which also included assessments of other aspects of tender responses. For key tenders (for example, catering), external government experts were involved in assessing the environmental aspects using an environmental procurement checklist, which covered the three key areas above in more detail.



### Did the project achieve its aims?

All project aims were achieved within the defined timeframe. The Melbourne 2006 Commonwealth Games proved a good opportunity to trial Environment Procurement Guidelines in a demanding, competitive environment. The guidelines and process developed will be used by the Victorian Government in developing and implementing similar guidelines.

### How were project achievements assessed

An audit of Melbourne 2006 RFPs issued confirmed that the Environmental Procurement Guidelines were included as a schedule.

A select number of tenders for major contracts for products or services were reviewed by taskforce members to confirm use of the guidelines and the proponents' response. The RFPs chosen were determined by the taskforce based on key environmental impacts and opportunities.

## ECO-Buy Business

😊 *A free program to help businesses purchase environmentally friendly products and integrate sustainable purchasing practices and attitudes into their organisation*

### How was the project implemented and who was involved?

ECO-Buy Business is a joint initiative of, and is funded by, OCGC, Sustainability Victoria and the Municipal Association of Victoria. The Buy Recycled Business Alliance was a partner in the development of the program.

ECO-Buy Business is supported by key peak bodies, the Australian Industry Group and Victorian Employers' Chamber of Commerce and Industry, and the Industry Capability Network.

ECO-Buy Business is hosted by the Municipal Association of Victoria, which introduced ECO-Buy to local government.

ECO-Buy Business commenced in July 2005 and was formally launched in November 2005.

### What was achieved?

Toyota Australia, the Games Environment Sponsor, is the foundation member of ECO-Buy Business. Thirteen other businesses (representing 5521 employees) have since joined the program, and a further 39 businesses are formally considering membership.

Toyota is currently developing its green purchasing action plan, which has attracted high level management support, and has nominated staff ECO-Buy Business representatives.

Transurban, a Games sponsor, and 13 other businesses have also joined ECO-Buy Business. All of these businesses have nominated staff representatives, have secured significant levels of support from management to implement the program and are in the process of developing their action plans and green purchasing policies.

Five other organisations are developing or have completed their action plans and green purchasing policies. Five ECO-Buy businesses have nominated staff representatives and have secured a significant level of support from management to implement the program.

ECO-Buy Business has also resulted in:

- the development of substantial purchasing and supply chain networks (for example, Toyota suppliers)
- the signing of a memorandum of understanding with the Savings in the City green hotel program to assist hotels with their green purchasing initiatives
- feature articles on the program appearing in the *Waste Management and Environment* and *Contract Management in Practice* magazines
- 14 ECO-Buy Business presentations being delivered to business seminars and events
- the hosting of a Green Purchasing Expo and two ECO-Buy Forums
- the inclusion of the Games program in the broader ECO-Buy program to significantly raise the profile of green purchasing
- the upgrading of ECO-Buy resources and specialist business materials for promotional purposes
- further activity to increase membership is occurring, including additional promotions and liaison with businesses

ECO-Buy Business has also attracted a new range of suppliers of green products to ECO-Find – ECO-Buy's database of green products. Key project stakeholders, Sustainability Victoria and the Department of Sustainability and Environment have confirmed their continued support for the program.

### Did the project achieve its aims?

Project aims were partially achieved within the defined timeframe but further activity is required to grow membership. Outcomes will be enhanced as membership of the program grows.

Since the launch of ECO-Buy Business in November 2005, ECO-Buy has generated a high level of interest in the business community. Awareness and demand for the program is growing.

ECO-Buy Business has significant potential and is an important environmental legacy program of the Commonwealth Games. Large organisations with high turnover, and with high volume purchasing areas, can have a major impact on markets and influence supply chains. This is already evident in Toyota Australia's implementation of the ECO-Buy program.

### How were project achievements assessed?

ECO-Buy Business achievements and activities have been recorded and reviewed by the ECO-Buy Business Advisory Group, which comprises representatives from Australian Industry Group, Buy Recycled Business Alliance, Department of Sustainability and Environment, Industry Capability Network, Municipal Association of Victoria, Melbourne 2006, OCGC, Sustainability Victoria, Toyota Australia and Victorian Employers' Chamber of Commerce and Industry.

## Environment Stakeholder Forum

😊 *Engaging and collaborating with key stakeholders from agencies and organisations contributing to the Games environmental outcomes*

### How was the project implemented and who was involved?

The Office of Commonwealth Games Coordination (OCGC) engaged many partners to deliver the Environment Program initiatives, and convened the Environment Stakeholder Forum to enable partners to exchange information and monitor the progress of those initiatives.

The stakeholders included:

- Catchment Management Authorities
- City of Melbourne
- Conservation Volunteers Australia
- Department of Education and Training
- Department of Innovation, Industry and Regional Development
- Department of Infrastructure
- Department of Sustainability and Environment
- ECO-Buy
- Environment Protection Authority
- Environment Victoria
- Greening Australia
- Melbourne 2006 Commonwealth Games Corporation
- Melbourne Water
- Municipal Association of Victoria
- Office of the Commissioner for Environmental Sustainability
- Parks Victoria
- Sustainability Victoria
- Toyota Motor Corporation Australia

Chaired by the Commonwealth Games Environment Ambassador, Mr Rob Gell, the group provided an inter-sectoral forum to analyse and assess issues arising from implementing the Games Environment Program.

The Environment Stakeholder Forum also provided the opportunity to link and integrate Games environment initiatives. For example, as a result of the forum, all stakeholders were invited to participate in events scheduled by other stakeholders, such as the *Our River, Our Games* initiative, ECO-Buy launch and venue tours.

The forum was the mechanism for reviewing and endorsing the *Melbourne 2006 Commonwealth Games Interim Report Card*.

### What was achieved?

The environment stakeholders met five times, and meetings focused on:

- the development of reporting and assessment framework for environment initiatives – the *Report Card*
- Games Ambassador activities
- progress reports on initiatives – for example: litter collection; tree planting; transport; ECO Buy; catering, cleaning and waste; Environment Management Plans and Systems

Forum members also toured Games venues (Athletes' Village, MCG and MSAC), with environmental features of venues highlighted on venue tours. A sub-group of the forum also met to confirm the rating system designed for the *Report Card*.

From the OCGC perspective, the forum proved invaluable as an efficient, effective means of providing and receiving key information about Games environment initiatives. From the stakeholder perspective, the forum assisted

in obtaining a clear picture of all environment initiatives, and provided an opportunity to gain insight into other sectors' activities – for example, infrastructure, litter and transport campaigns.

### Did the project achieve its aims?

The Environment Stakeholder Forum achieved its aim of engaging stakeholders and facilitating information exchange.



“The Environment Stakeholder Forum achieved its aim of engaging stakeholders and facilitating information exchange.”

## Green Events Plan

😊 *Implementing knowledge gained from the Commonwealth Games by developing a Green Events plan for future major events*

### How was the project implemented and who was involved?

Based on knowledge gained during the Commonwealth Games, a Green Events plan has been developed by OCGC, and includes initiatives in the following key environmental areas:

#### ENERGY EFFICIENCY AND GREENHOUSE

- using energy efficient equipment and venues (specifications, temporary equipment and buildings, generators, vehicles)
- calculating an event's greenhouse gas emissions
- powering of event by Green Power
- offsetting of greenhouse gas emissions
- encouraging use of public transport, walking and cycling
- reporting on energy efficiencies

#### WASTE AND RECYCLING

- arranging and contracting waste management
- using WasteWise practices for catering services
- implementing packaging policies
- erecting waste and recycling signage
- obtaining WasteWise certification
- minimising litter
- minimising one-off purchases and subsequent disposal of equipment
- clarifying post-event disposal channels
- reporting on waste and recycling activities

#### WATER

- reusing water from traffic barriers
- specifying WaterWise equipment
- erecting temporary drinking water fountains
- recycling water
- managing stormwater in the lead-up to and during events

#### EVENT MANAGEMENT AND SYSTEMS

- selecting appropriate venues
- developing and delivering Environmental Management Plans (EMPs) for construction
- developing and delivering EMPs and checklists for venue/event operations
- creating Environmental Procurement Guidelines
- implementing ECO-Buy practices for event businesses
- selecting appropriate hotels and other accommodation providers

#### EDUCATION AND COMMUNICATION

- including environment components in staff volunteer training
- sharing an event's environmental commitments with the community
- communicating with environment stakeholders

### What was achieved?

A Green Events plan was developed. Sustainability Victoria committed to further develop this plan and will investigate incorporating this with its WasteWise Events Plan.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

The Green Events plan was developed.



“Based on knowledge gained during the Commonwealth Games, a Green Events plan has been developed by OCGC.”

## Local Environmental Initiatives

😊 *Delivering the 'Getting Involved' Grants Program to all 79 Victorian local government areas to support communities in undertaking Games-related activities*

### How was the project implemented and who was involved?

Getting Involved was a joint initiative of OCGC and all 79 Victorian local government areas.

The program was delivered by Victorian councils and shires, with projects selected according to selection criteria directed by a competitive grant program across six categories, including celebrations and infrastructure projects.

Eight local government areas elected to undertake environment-related projects.

Getting Involved commenced in mid-2005 and concluded by 30 March 2006.

### What was achieved?

The community environment-based projects undertaken as part of Getting Involved are listed below:

- Bayside City Council – developed an Indigenous Coastal Trail which promotes, conserves and enriches Bayside's unique history, diversity and culture
- Brimbank City Council – upgraded an existing walking path, now known as the Commonwealth Games Forest Trail, with works comprising community art installations, native vegetation planting (4500 trees for the 4500 Games athletes), fitness stations and a trail map display

- Campaspe Shire – conducted a Clean-Up Day, with the shire council, Landcare volunteers and local schools working together to clean up the local route for the Melbourne 2006 Queen's Baton Relay
- Murrindindi Shire Council – built the all weather Yea Wetlands Boardwalk, to maximise the use and accessibility of the Yea Wetlands
- Northern Grampians Shire – constructed Cato Lake Community Walking Path to increase recreational usage around the shores of Cato Lake
- Swan Hill Rural City Council – constructed a two kilometre Games Track, which links to other local walking and riding tracks to create a continuous network of tracks
- Yarra City Council – conducted the Yarra River Trail Enhancement project, which upgraded and developed infrastructure along the Yarra River

Trail in order to support its recreation, sporting and tourism use

- Yarriambiack Creek Walk – constructed 50 kilometres of walking track around Yarriambiack Creek at Brim and Beulah and along the creek to Warracknabeal

### Did the project achieve its aims?

Aside from the Bayside Council project, which was due to be completed by 30 June 2006, all project aims were achieved within the defined timeframe. The delay to that project was due to extensive consultation required with the local Indigenous community.

### How were project achievements assessed?

Final evaluation reports were submitted for all projects. Photos of infrastructure projects were provided in the final report.



# Karak

## Games mascot, 'Karak'

☺ *Raising awareness of the Games mascot, Karak, and of action being taken to protect the south-eastern red-tailed black cockatoo*

### How was the project implemented and who was involved?

The Games mascot was a joint initiative of OCGC, Melbourne 2006 and Department of Sustainability and Environment.

A range of initiatives were undertaken to raise awareness about the plight of Karak as an endangered species, including:

- launching 'Karak' vehicle number plates to raise money to fund protection activities for the south eastern red-tailed black cockatoo
- distributing information in the community about Karak and the south-eastern red-tailed black cockatoo
- revegetating and protecting Karak's habitat by planting trees in the Casterton area
- educating school children about Karak and the endangered species via the Games Education Program



- featuring Karak as a key design element in Queen's Baton Relay marketing and media materials distributed in Australia and all Commonwealth nations and territories overseas, and its website

### What was achieved?

All 1000 limited edition Karak vehicle number plates were sold. This raised \$180,000 for organisations working to protect the south-eastern red-tailed black cockatoo, including the Australian Bush Heritage Fund, Trust for Nature and Birds Australia.

The Federal Government committed \$1.3 million to a rescue plan for the south-eastern red-tailed black cockatoo.

A Karak fact sheet was distributed to the community, and Karak information was placed on the Melbourne 2006 website.

One of the Games tree planting sites was at Casterton, known to be home to the south-eastern red-tailed black cockatoo. The planting revegetated 10 hectares of habitat, with planting focused on providing a future food source and habitat (brown stringybark and red gum). The planting day involved more than 200 local school children who were also educated about Karak and endangered species.

The Games Education Program incorporated elements to introduce students to Karak and endangered species, from the preparatory level to school leavers in, contained in:

- Games curriculum materials – which provided information about Karak for all education levels
- *Gameszines* – each issue included a 'Karak Korner' feature which provided information about Karak.

Many students included Karak as a theme in the artwork they produced for the Art4Athletes program.

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

A site audit of Casterton planting was conducted and confirmed that species planted were growing well.

Karak vehicle number plate sales information was collected and reviewed.

The content of Games materials provided to schools was assessed and Karak content reviewed.

# Education and Training

## Schools Education

😊 *Educate school students about environmental issues through the Games Education Program*

### How was the project implemented and who was involved?

The Commonwealth Games Education Program was a joint initiative of OCGC, Department of Education and Training and Sustainability Victoria, with collaboration from the Environment Protection Authority, Department of Sustainability and Environment and TreeProject.

The program provided school students with opportunities to leverage from the Commonwealth Games to learn about the sporting, cultural, environmental and cultural diversity of the Commonwealth of Nations; and to link with and participate in Games activities.

A range of classroom resources, including detailed curriculum materials, were developed for schools.

Environmental education information and details of recommended activities were also provided to schools and students through:

- water conservation schools posters
- *Education Times* updates

- *Gamezine* articles
- Games websites

Schools and students were involved in many Games environmental volunteering activities, including tree planting, tree growing, litter collection and environmental activities along the Yarra.

Schools entered the Commonwealth Games WasteWise Events Challenge (part of the WasteWise Schools Awards), with entrants asked to design their own WasteWise event.

### What was achieved?

Commonwealth Games curriculum materials were sent to 2400 schools in Victoria. Environmental education materials were included for students at all levels in the following components of the resources:

- 'Starting Blocks' – introductory materials
- post-compulsory resources – for years 11 and 12 students
- 'Let the Games Begin' – designed for middle years students



- ‘United through the Games’ – integrated units designed for primary and middle years
- ‘CommPASS’ – for primary school students

The Education Program’s partnership with *The Age* resulted in the publication of a Games environment supplement and poster, which were distributed with the newspaper.

More than 15,000 water conservation posters were produced and distributed to schools.

The Commonwealth Games WasteWise Event Challenge attracted entries from schools throughout Victoria. The winners were: Hughesdale Primary School (for its plan to transform its weekly market into a WasteWise event) and East Bentleigh Primary School (for its plan to stage its own WasteWise Games incorporating a range of activities related to waste and litter education).

More than 1000 school students were involved in planting trees at Games tree planting days around the State. Ten schools were involved in growing approximately 5000 seedlings for the Games.

### **Did the project achieve its aims?**

All project aims were achieved within the defined timeframe.

### **How were project achievements assessed?**

Site visits were undertaken to a number of the schools and to groups involved in growing trees for the Games.

Registration details for those involved in tree planting recorded the numbers of school students involved. A panel assessed winners of the WasteWise Events Challenge and reviewed all entries.

Commonwealth Games curriculum materials were distributed to all schools in Victoria and also available for download via the internet.

## **Volunteer and Staff Training**

😊 *Increasing awareness of environmental issues among Games staff and volunteers*

### **How was the project implemented and who was involved?**

OCGC and M2006 collaborated to ensure key environment messages were included in Games workforce training.

Games staff and volunteers were given an overview of the Games environment strategy in training sessions and the workforce manual prior to the Games. This was supported with venue-specific training, focused on policies and practices applying to their area.

Environment messages were reinforced at all venues via visual displays, and during the Games via the workforce newsletter *United*.

### **What was achieved?**

All Games staff and volunteers were provided with the *Team2006 Workbook*, which highlighted the three key objectives of the Games: WaterWise, Carbon Neutral and Low Waste. The *Workbook* also emphasised the use of public transport and reinforced recycling messages.

All staff and volunteers were encouraged to carry a *Pocket Guide* during the Games (and while in uniform). The *Pocket Guide* included the environment information provided in the *Workbook* and during training.

All Games volunteers were trained prior to the Games by Holmesglen TAFE Institute. Training modules followed the *Workbook* content, reinforced the Games environment objectives and focused

on transport, waste and recycling, and Games mascot, Karak.

Staff and volunteer inductions at venues, and venue-specific training, incorporated the Catering, Cleaning and Waste *Venue Operating Policy*, which set out packaging, waste and recycling requirements. These were supported by signage at all venues, which showed recycling and waste streams.

### **Did the project achieve its aims?**

All project aims were achieved within the defined timeframe.

### **How were project achievements assessed?**

Workforce information and training materials were assessed, and venue operating arrangements were audited during Games time.

## Community Environmental Education

😊 *Increasing awareness of environmental issues and initiatives by providing information on the Games Environment Program*

### How was the project implemented and who was involved?

OCGC Policy and Planning and OCGC Communications managed a systematic and strategic flow of information to key stakeholders

and the community via media (electronic and print) and advertising and marketing campaigns.

Media releases relating to the Games Environment Strategy were regularly released from the time the Games were announced. Information about key elements of the strategy – including the Games *Environment Report Card* – was highlighted in ministerial announcements and events.

Combined with the appointment of high-profile environmentalist and media personality Mr Rob Gell as Games Environment Ambassador, these strategies ensured key environmental messages had broad coverage and reached many audiences, including:

- participants in ‘Our Games Forums’ – comprising community, multicultural, youth, regional and health organisation representatives
- volunteers and Games workforce – who received training on the Games Environment Program and elements specifically relevant to their role (for example, recycling at venues and the Athletes’ Village)
- Building Industry Consultative Council – briefed by Rob Gell on environmental features of the Athletes’ Village
- environmental education teachers – who attended a presentation about conserving the south-eastern red-tailed black cockatoo at Healesville Sanctuary



### What was achieved?

The community environmental education strategy resulted in:

- reports on the Games environment initiatives appearing in all metropolitan and regional print and electronic media over many months
- collaboration on environmental issues between Our Games Forum members (for example, Environment Ambassador and Director of VicHealth; and Environment Ambassador and CEO of Australian Multicultural Foundation)
- Games environment information being included on the OCGC and M2006 websites – the latter being the key Games information site
- information about Games environment initiatives (for example, recycling) being provided to Games athletes and visitors at the Athletes’ Village via the *Athletes’ Village Guidebook* and signage throughout the Village
- a comprehensive anti-litter campaign
- training for Games workforce on environment initiatives – recycling in particular

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe. Appointing the Games Environment Ambassador as the public face of the Games environment strategy proved very effective in attracting community and media attention.

### How were project achievements assessed?

OCGC monitored all media coverage, participated in training sessions, reviewed key websites and assessed the role of the Games Environment Ambassador.

The longer term value of this environmental education will be borne out by further collaboration between environmental and community stakeholders on environmental projects. This is likely to include a combined local government, State Government and community project to recruit and train young multicultural environment ambassadors.

## Green Trades

😊 *A tailored environmental training program for plumbing and electrical apprentices at Commonwealth Games construction sites*

### How was the project implemented and who was involved?

Green Trades was a joint initiative of OCGC and Sustainability Victoria and provided environmental sustainability training for apprentices working on construction of Games venues and the Athletes' Village.

This tailored training program drew on materials produced by the Master Plumbers and Mechanical Services Association of Australia (MPMSAA) and

Alternative Technologies Association. Industry stakeholders were consulted to ensure the training was suitable for apprentices.

Sustainability Victoria managed the project, developed course content and publicised the program. Course participants' costs were met by OCGC. The MPMSAA and RMIT University prepared course materials and delivered the training.

### What was achieved?

GreenPlumber training was delivered to 16 Games apprentices, and a further 40 registered or accredited plumbers also undertook the training, which covered:

- climate care – hot water heating, energy consumption, heating and cooling appliances, greenhouse gas abatement



- solar hot water – technology, rebates, sizing, installation, retrofitting and new technology
- water efficient technology – regulations, wastewater opportunities and classes, and greywater

Fifteen apprentices completed the Energy Smart Electricians training which covered reducing greenhouse pollution, energy efficient lighting, systems and maintenance.

### Did the project achieve its aims?

The project aims were achieved, and participant comments on its value and usefulness were very favourable. More than 90% of apprentices involved noted they would apply the training content to their employment and expected to change their work practices following the course.

### How were project achievements assessed?

All course participants evaluated the program and Sustainability Victoria monitored its implementation. As a lasting legacy of this initiative, it is planned that environmental sustainability information will be incorporated into future apprenticeship training.

## Savings in the City

😊 *Implementation of actions to improve resource efficiency in hotels*

### How was the project implemented and who was involved?

Savings in the City was a joint initiative of OCGC and the City of Melbourne, in partnership with Sustainability Victoria, Origin Energy and City West Water, as well as the Hotels, Motels and Accommodation Association, Tourism Victoria and ECO-Buy.

The program had a number of components as follows:

- benchmarking hotels
- establishing environment committees or green teams
- developing waste reduction and WasteWise accreditation action plans
- assessing energy efficiency and developing action plans
- assessing water usage and developing action plans
- providing TravelSmart information
- informing participants about ECO-Buy's Business Green procurement program.

The project commenced engaging hotels in July 2005 and the initial round concluded in July 2006. The program is planned to continue with other hotels and expand to other industries.

### What has been achieved?

- 24 hotels enrolled in the program, covering 4275 guest rooms (23% of the guest rooms in the City of Melbourne)

- 20 hotels participated in annual benchmarking
- 15 waste audits and 10 energy assessments were conducted
- benchmarking data identified the average electricity consumption per guest night was 99 MJ, average gas consumption per guest night was 96 MJ and average water consumption per guest night was 285 litres
- 15 hotels were benchmarked and achieved WasteWise status and all are starting to implement their waste reduction action plans
- waste reduction actions to date (for 15 hotels) have delivered an average annual saving of \$10,000 per hotel, 31% average annual reduction in waste to landfill and 1300 tonnes combined annual reduction in waste to landfill
- 800 reusable shopping bags were distributed to hotels in March 2006
- 5000 TravelSmart maps were distributed to hotels in preparation for the Commonwealth Games – these highlighted walking, cycling and public transport options
- the project has built strong cooperative relationships between partners who are now actively seeking to roll out this program across a wider region

### Did the project achieve its aims?

All project aims were achieved within the defined timeframe.

### How were project achievements assessed?

Site audits and reviews of utility bills were undertaken by City of Melbourne consultants to identify achievements.

## 8. Lasting Benefits for the Environment

The Victorian Government and environment stakeholders are committed to ensuring that the value of the Games' environmental initiatives last long after the Closing Ceremony.

The Games Environment Strategy and the partnership between the Government and stakeholders aimed to ensure that the Games resulted in:

- practical outcomes and improvements – for example: trees planted, water quality enhanced and energy efficiency increased in a range of public places
- increased environmental awareness and responsibility within the community and the event management industry
- cooperation within environment sectors to contribute to long-term change and environmental benefits

The Environment Stakeholder Forum has played a key role in assessing the *Commonwealth Games Environment Strategy*, and confirming the monitoring and reporting framework for all the initiatives. The forum probed the challenges emerging from delivering an environmentally sustainable event, and this *Report Card* is evidence of their important and valuable contribution.





“The Victorian Government and environment stakeholders are committed to ensuring that the value of the Games’ environmental initiatives last long after the Closing Ceremony.”

Rob Gell, Melbourne 2006 Commonwealth Games Environment Ambassador

## 9. Key Contacts

### **Office of Commonwealth Games Coordination**

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[www.dvc.vic.gov.au/commonwealth\\_games](http://www.dvc.vic.gov.au/commonwealth_games)

### **Melbourne 2006 Commonwealth Games Corporation**

World Trade Centre  
Siddeley Street  
Melbourne Vic 3000  
t. 03 9613 2006  
[www.melbourne2006.com.au](http://www.melbourne2006.com.au)

### **Bicycle Victoria**

Level 10, 446 Collins Street  
Melbourne Vic 3000  
t. 03 8636 8888  
[www.bv.com.au](http://www.bv.com.au)

### **City of Melbourne**

90-120 Swanston Street  
Melbourne Vic 3000  
t. 03 9658 9658  
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### **City of Port Phillip**

**Private Bag 3**  
St Kilda Vic 3182  
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[www.portphillip.vic.gov.au](http://www.portphillip.vic.gov.au)

### **City West Water**

247-251 St Albans Road  
Sunshine Vic 3020  
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[www.citywestwater.com.au](http://www.citywestwater.com.au)

### **Clean Up Australia**

18 Bridge Road  
Glebe NSW 2037  
t. 02 9552 6177  
[www.cleanup.com.au](http://www.cleanup.com.au)

### **Conservation Volunteers Australia**

62-74 Pickles Street  
South Melbourne Vic 3205  
t. 03 9686 5554  
[www.conservationvolunteers.com.au](http://www.conservationvolunteers.com.au)

### **Department of Sustainability and Environment**

8 Nicholson Street  
East Melbourne Vic 3002  
t. 136 186  
[www.dse.vic.gov.au](http://www.dse.vic.gov.au)

### **Department of Infrastructure**

Level 14, 80 Collins Street  
Melbourne Vic 3000  
t. 03 9655 6666  
[www.doi.vic.gov.au](http://www.doi.vic.gov.au)

### **ECO-Buy**

Level 12, 60 Collins Street  
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[www.mav.asn.au/ecobuy](http://www.mav.asn.au/ecobuy)

### **Environment Protection Authority**

Herald and Weekly Times Tower  
40 City Road  
Southbank Vic 3006  
t. 03 9695 2700  
[www.epa.vic.gov.au](http://www.epa.vic.gov.au)

### **Greening Australia**

10 Buckingham Drive  
Heidelberg Vic 3084  
t. 03 9450 5300  
[www.greeningaustralia.org.au/GA/VIC](http://www.greeningaustralia.org.au/GA/VIC)

### **Major Projects Victoria**

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[www.majorprojects.vic.gov.au](http://www.majorprojects.vic.gov.au)

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**Melbourne Water**

100 Wellington Parade  
East Melbourne Vic 3002  
t. 03 9235 7100  
[www.melbournewater.com.au](http://www.melbournewater.com.au)

**Parks Victoria**

Level 10, 535 Bourke Street  
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[www.parkweb.vic.gov.au](http://www.parkweb.vic.gov.au)

**Port Phillip and Westernport  
Catchment Management Authority**

40 Ballarto Road  
Frankston Vic 3199  
t. 03 9785 0183  
[www.ppwcm.vic.gov.au](http://www.ppwcm.vic.gov.au)

**Sport and Recreation Victoria**

Department for Victorian Communities  
Level 14, 1 Spring Street  
Melbourne Vic 3000  
t. 03 9208 3333  
[www.sport.vic.gov.au](http://www.sport.vic.gov.au)

**Sustainability Victoria**

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East Melbourne Vic 3000  
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Melbourne Vic 3000  
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**TreeProject**

3rd Floor, Ross House  
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Melbourne Vic 3000  
t. 03 9650 9477  
[www.treeproject.asn.au](http://www.treeproject.asn.au)

**Victorian Litter Action Alliance**

Level 2, 478 Albert Street  
East Melbourne Vic 3002  
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[www.litter.vic.gov.au](http://www.litter.vic.gov.au)

**Village Park Consortium**

980 Park Street  
Parkville Vic 3205  
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For further information about Toyota Australia's  
environment initiatives visit  
[www.environment.toyota.com.au](http://www.environment.toyota.com.au)

OCGC acknowledges the Swedish Environmental  
Objectives Council for permission to adapt their  
reporting model: [www.miljomal.nu](http://www.miljomal.nu)



Cover is printed on 300gsm Revive Laser and text is printed on 110gsm Revive Laser paper stock. Revive Laser is Australian made from 100% recycled pre and post consumer waste fibre. The publication is printed with inks sourced from plant derivatives.

Printed by Finsbury Green Printing  
46 Wirraway Drive  
Port Melbourne Victoria 3207

Authorised by the Hon Justin Madden MLC  
Minister for the Commonwealth Games  
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