

# MINUTES

Sustainability Advisory Committee

## MINUTES OF THE SUSTAINABILITY ADVISORY COMMITTEE MEETING

HELD ON

MEETING DATE

**THURSDAY 13 SEPTEMBER 2007**

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City of  
Joondalup

## CITY OF JOONDALUP

### MINUTES OF THE SUSTAINABILITY ADVISORY COMMITTEE MEETING HELD IN CONFERENCE ROOM 3, JOONDALUP CIVIC CENTRE, BOAS AVENUE, JOONDALUP ON THURSDAY, 13 SEPTEMBER 2007.

#### ATTENDANCE

##### Committee Members:

Cr Michele John	Presiding Person	<i>from 1823 hrs</i>
Cr Steve Magyar		
Cr Russ Fishwick	Deputy Presiding Person	
Mr John Willett		<i>to 1935 hrs</i>
Ms Wendy Herbert		
Mr Will Carstairs	Community Rep	

##### Officers:

Mr Ian Cowie	Director, Governance & Strategy	
Ms Rhonda Hardy	Manager, Strategic Development	
Mrs Catherine Buckley	Senior Project Officer	<i>absent from 1903 hrs to 1905 hrs</i>
Mrs Jill Hewison	Administrative Secretary	

##### In Attendance – Item 1

Mr N Turner, Strategy Manager, Water Recycling, Water Corporation	<i>to 1903 hrs</i>
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#### DECLARATION OF OPENING

The Deputy Presiding Person declared the meeting open at 1814 hrs.

#### APOLOGIES/LEAVE OF ABSENCE

Cr Sue Hart  
Mr Brett Dorney  
Ms Ute Goeft

#### CONFIRMATION OF MINUTES

##### MINUTES OF THE SUSTAINABILITY ADVISORY COMMITTEE MEETING HELD ON 19 JULY 2007

**MOVED Cr Magyar SECONDED Mr Will Carstairs that the minutes of the meeting of the Sustainability Advisory Committee held on 19 July 2007 be confirmed as a true and correct record.**

**The Motion was Put and**

**CARRIED (5/0)**

**In favour of the motion:** Crs Magyar & Fishwick, Mr W Carstairs, Mr J Willett, Ms W Herbert

**ANNOUNCEMENTS BY THE PRESIDING PERSON WITHOUT DISCUSSION**

Nil.

**DECLARATIONS OF INTEREST**

Nil.

**IDENTIFICATION OF MATTERS FOR WHICH THE MEETING MAY SIT BEHIND CLOSED DOORS**

Nil.

**PETITIONS AND DEPUTATIONS**

Nil.

**REPORTS****1 PRESENTATION – UNDERGROUND WATER REPLENISHMENT PROJECT [00906]**

<b>WARD:</b>	All
<b>RESPONSIBLE DIRECTOR:</b>	Mr Ian Cowie Governance & Strategy

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Nick Turner is the Strategy Manager of the Water Corporation's Underwater Replenishment Project.

This presentation will provide an overview of this pilot project. This project aims to utilise waste water produced at the Beenyup Waste Treatment Plant (Craigie) and treat the water to a tertiary level which is then injected into the groundwater aquifer via a bore system. The pilot project has been funded by the Federal Government and if successful will produce a long-term solution for replenishing groundwater aquifers.

*Cr John entered the Room at 1823 hrs and assumed the Chair.*

**Presentation**

Mr Turner, Strategy Manager, Water Recycling, Water Corporation, gave an overview of the Report and distributed a handout on Groundwater Replenishment (Attachment 1 refers). Discussion ensued.

The Presiding Person thanked Mr Turner for his presentation.

*Mr Turner left the Room at 1903 hrs.*

*Senior Project Officer left the Room at 1903 hrs and returned at 1905 hrs.*

## **2 PRESENTATION – IMPACT OF DRUG USE IN LOCAL SOCIETIES [00906]**

**WARD:** All

**RESPONSIBLE  
DIRECTOR:** Mr Ian Cowie  
Governance & Strategy

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Wendy Herbert, will present to this Sustainability Advisory Committee meeting, an overview from the Drug Free Australia Conference - Impact of Drug Use in Local Societies.

This presentation raises a social sustainability issue that is prevalent across Australia and within Joondalup. In order to raise awareness of the drug issues within the Joondalup community, Mrs Wendy Herbert will give an overview of her presentation at the Drug-Free Australia conference held in Melbourne 2007. Wendy will point out that one in three families are currently coping with illicit drug problems. Western Australia (which includes Joondalup) has the highest consumption of amphetamine (in particular ICE) use.

This presentation will provide an overview of the current drug policy in Australia and Wendy will present some of her ideas for how the City of Joondalup can look at addressing this problem within our local community.

### **Presentation**

Ms Herbert provided an overview of the Report and distributed a handout 'ICE PACK - Information on Methamphetamine' (Attachment 2 refers). Ms Herbert also made reference to a Drug Free Australia Conference (Attachment 3 refers) to be held in South Australia and to European Cities Against Drugs (ECAD) (Attachment 4 refers). Discussion followed.

*Mr Willett left the Room at 1935 hrs.*

**ITEM 1                      SOLAR POWER TECHNOLOGY - [00906]****WARD:** All**RESPONSIBLE  
DIRECTOR:** Mr Ian Cowie  
Governance and Strategy

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**PURPOSE/EXECUTIVE SUMMARY**

To provide the Sustainability Advisory Committee (SAC) with an overview of solar power technology, potential projects the City could undertake in relation to solar power in the future and to consider options for the promotion of solar power as an energy saving measure to the community.

**BACKGROUND**

At it's meeting on 24 May 2007, SAC requested that a report be drafted in relation to solar energy systems.

After the Federal Government's budget announcements in May of this year, the demand for solar power systems has considerably increased in light of new government rebates for residential and community-building installations.

Despite the City's ineligibility for these rebates, it has still been noted as an opportune time for the City to consider introducing solar power technology as a means of further reducing carbon emissions and for promoting the use of renewable energy to its residents.

The City has no current solar power systems in place. However through the "Cities for Climate Protection Program" the City has undertaken many initiatives to reduce greenhouse gas consumption including the use of renewable energy.

As part of the Craigie Leisure Centre redevelopment the City installed a geothermal heating system to heat the Centre's two pools and to provide air temperature control. Whilst this system had greater capital costs when compared to other heating systems, it provided the greatest long-term savings and environmental benefit over the expected life of the project. The system is projected to provide 14,000 tonnes of CO<sub>2</sub>-e savings over the 15 year life of the project.

Since August 2005, the City has purchased renewable energy from Landfill Gas & Power P/L whose landfill gas turbines capture and recover methane at Tamala Park. In the financial year 2006-2007, 4,583,219 kWh of renewable energy was purchased which has avoided 4,404.47 tonnes of CO<sub>2</sub>-e.

The City's 2006 Measures Evaluation Report has quantified an abatement of 79,632 tonnes of CO<sub>2</sub>-e abatement from 1998/99 to 2005/06. The Draft 2007 Measures Evaluation Report has estimated that the City has abated a further 61,508 tonnes of CO<sub>2</sub>-e in 2006-07. The City has achieved this reduction by undertaking a comprehensive range of actions that have significant opportunities for abatement.

The City's Draft Greenhouse Action Plan 2007 – 2010 provides direction for reducing the City's greenhouse gas emissions over the next four years. The Draft Plan includes the following actions relating to renewable energy:

- Undertake energy audits on the top 5 emitting Council buildings and develop a priority schedule for undertaking ongoing audits of all other Council buildings;
- Further investigate the viability of utilising green power supplied from renewable energy for other Council facilities; and
- Investigate opportunities for introducing solar power lighting as pilot projects.

## DETAILS

Solar power (otherwise known as “solar energy”) is radiation emitted by the sun that can be harnessed by technology to produce heat and electricity.

Solar energy requires two technological components in order for the energy to become functional. These components are a *collector* and a *storage unit*.

### Types of solar energy technologies

There are three methods of collecting solar energy that are currently in use today. These are: flat-plate collectors, focusing collectors and passive collectors.

#### *Collectors*

Flat-plate collectors are the most commonly used. (Refer to Diagram 1 in Attachment 1). They consist of an array of solar panels arranged in a simple flat plane. They apply photovoltaic (photo=light volt=electricity) technology to convert solar energy into electricity through the use of semi-conductor materials (usually silicon). They can vary greatly in size and have an output that is directly related to a few variables including size, facing and cleanliness. These variables all affect the amount of radiation that falls on the collector. Some of the issues these variables encounter are potentially overcome by automated machinery that keeps the flat-panel facing the sun. The additional energy required to drive this machinery is easily offset by the additional energy captured by the panel's more efficient orientation. Flat-plate collectors require very little maintenance due to the limited amount of moving parts, which consequently increases the life of the technology to an expected 25 years. They are also suitable for urban areas due to the limited space they consume and the absence of noise when in use.

Focusing collectors are essentially flat-plate collectors with optical devices that are arranged to maximise the solar energy falling on the collector's focus area. (Refer to Diagrams 2 and 3 in Attachment 1). They are less popular than the traditional flat-plate collector and function predominantly as solar furnaces. Focusing collectors produce enormous amounts of energy at a single point, but lose some of the energy that flat-plate collectors would otherwise be able to retrieve. Another issue encountered by this type of collector is the loss of efficiency the silicon parts experience when exposed to extremely high temperatures. Permanent damage may also occur to parts if not sufficiently safeguarded. This creates additional costs in the purchase, installation and maintenance of the collector.

Passive collectors absorb solar energy and convert it to heat naturally. (Refer to Diagrams 4 and 5 in Attachment 1). All objects have this property to some extent, but only some objects will be able to produce enough heat to make it worthwhile. This natural ability is often enhanced in some way (traditionally by painting the object black) and a system for transferring the heat to a different location is added. A common use of this collecting method is the installation of black pipes on household roofs to heat pools and spas.

### *Storage units*

Solar energy is best suited for heating, as it is the most highly efficient form of energy transformation. Heat energy is typically stored in a liquid, such as water, or in a packed bed of stones. Heat energy may also be stored in a “phase-changer” or “heat-of-fusion unit”. These storage units contain a chemical that changes from a solid to a liquid, subsequently “trapping” energy in the liquid. This energy is released when the chemical is transformed back into its solid form.

### *Applications*

Solar energy heating is typically used in households to heat water and the water itself is utilised as the storage unit. The heating of large buildings often employs heat-of-fusion storage units, but more often than not, packed beds and hot-water tanks are the preferred models of storage due to their reduced cost. When heating a building, it is often best to combine flat-plate collectors with passive collectors to maximise the net amount of solar energy collected and reduce the purchasing costs of flat-plate collectors. Examples of passive collectors used in building heating include: incidental heat trappings, by having windows face the sun during the day; thermosyphoning walls and roofs to reroute heat into areas where the heat is most needed; and solar ponds, where bodies of water near the building are used to collect and store heat before rerouting the heat back and forth from the building to the pond.

Solar energy may also be used for cooling, but at this stage, it is incredibly expensive. It is similar to the “phase-changer” storage principle in that it involves the changing of a liquid to a gas. The resultant gas is transferred into a lower pressure chamber that lowers the temperature of the gas. The low temperature gas absorbs the heat from a room, effectively cooling the area.

One of the most popular applications of solar energy is the conversion of energy to electricity. This is achieved through photovoltaic cells (as outlined earlier in the details section of the report). Photovoltaic cells operate at a low efficiency, typically around 15%. This means that out of all the solar radiation that falls upon them, less than 15% of it is converted into electricity. The maximum theoretical efficiency for a photovoltaic cell is 32.3%, which if achieved, would make solar electricity very economical. Recent advances have enabled an efficiency of up to 28.2%, but this is only in a laboratory environment.

### Types of installations for solar electricity

*Grid Connected Systems* interact with the electricity supply grid. They are generally located in urban areas and photovoltaics are the usual energy source. The main components of the system are the photovoltaic cells and a grid interactive inverter.

The inverter converts the low DC voltage generated by the system to the normal 240V AC building supply. It also monitors the operation of the system to control how much electricity is drawn from or fed to the grid.

If the building uses more energy than the solar panels can supply, the shortfall is provided by the grid so power is always available. If the system is supplying more energy than is needed, the excess is fed into the grid. Often the meter just “runs backwards” when electricity is going into the grid, so the household only pays for the difference between what is imported and what is exported.

Grid Connected Systems do not have storage batteries and do not provide a guaranteed continuous power supply. If the grid goes down the inverter will cut out for safety reasons and there will be no electricity available.

*Off-Grid Solar Systems* use solar panels to produce DC electricity which is then stored in a battery bank. An inverter then converts the DC power stored in the batteries to AC power - the kind of power found in a Grid Connected building. Sometimes, Off-Grid Systems will include a backup engine generator to charge the batteries if they get too low. Such a system can be set up so that the generator starts automatically in a low battery condition. These systems have a greater reliability for preventing a loss of continuous power, but are most often utilised in rural or remote areas due to inaccessibility to power lines. It is also more expensive to install.

### New solar technologies

#### *Sliver Cells*

Sliver Cells are a new type of solar cell that uses 90% less silicon than standard solar panels. The considerable reduction in materials means that the costs of manufacturing the product are drastically reduced. The technology was developed in Australia and is currently being manufactured on a small scale at a facility in South Australia.

The process for manufacturing the cells requires “slivering” pieces of silicon into thin “wafers” to produce more silicon cells out of the same amount of material required for normal solar cell production.

The slivering of cells also increases the cell’s efficiency to over 19%; this is over 5% more than the most efficient solar cells in the market today. Further, Sliver Cells are able to continue working at their highest capacity, even if 90% of a solar panel is covered in shadow. General solar cells begin to lose efficiency after only 20% of the panel being subjected to shadowing.

Sliver Technology is anticipated to revolutionise solar energy systems in the future and will be available for purchase in about two years time.

Sliver Technology is a registered trademark of Origin Energy Solar Pty Ltd, a wholly owned company of Origin Energy Limited, Australia’s second largest energy company.

#### *Dye Solar Cells*

Dye Solar Cells are photovoltaic cells that use titania and a special dye, rather than expensive silicon crystal, to artificially recreate photosynthesis. The technology was developed in Australia and claims to be: cheaper than conventional silicon cells, translucent (so they can be used as energy producing windows) and able to work in shadowed conditions.

The technology is still being developed and tested.



### Examples and case studies of solar technology use

#### *Solar Cities*

Solar Cities is a \$75.3 million initiative announced by the Prime Minister in the Energy White Paper, *Securing Australia's Energy Future*, in June 2004. It will be implemented by the Department of the Environment and Water Resources through trials in Adelaide and at least three other electricity grid-connected urban areas around Australia.

Solar Cities is an innovative programme which is designed to demonstrate how solar power, smart meters, energy efficiency and new approaches to electricity pricing can combine to provide a sustainable energy future in urban locations throughout Australia. It is a partnership approach that involves all levels of Government, the private sector and the local community.

Adelaide, Townsville, Blacktown and Alice Springs are the first four solar cities announced in Australia. With \$49 million of funding from the Solar Cities initiative, the Blacktown, Adelaide, Townsville and Alice Springs Solar City consortia are working with industry, businesses and their local communities to rethink the way they produce and use energy.

#### *Melbourne Council House – “CH2”*

CH2 is a 10-storey office building for 540 City of Melbourne staff, with ground-floor retail spaces and underground parking. It was officially opened in August 2006 and boasts 11.3 million dollars worth of sustainability features, including photovoltaic cells and light harvesting devices.

The total cost of the project was \$51.045 million that is anticipated to be paid back, through reduced energy costs, within 10 years. Electricity costs of the City have reduced by 85% due to the sustainable features of the Council Building. Gas has reduced by 87% and water by 72%.

#### *Moreland City Council - Victoria*

Moreland Council is encouraging residents to take up green power options, working with the community to reduce waste, ensuring that recycled materials are used in new buildings and promoting environmentally friendly design.

Moreland Energy Foundation Ltd (MEFL) is an independent, not for profit organisation established by Moreland City Council to help reduce greenhouse gas emissions across the municipality. Established after the forced sale of Council owned electricity retailers, MEFL is the first independent, locally based organisation in Australia devoted entirely to reducing community greenhouse emissions.

Since 2001, MEFL has worked with households, businesses, schools and community groups to reduce wasteful energy use, save money on power bills and make buildings more comfortable to live and work in year round. As well, Council continually strives to find ways to further reduce its own energy consumption and greenhouse gas emissions through review of Council buildings and practices.

Moreland City Council aims to reduce greenhouse emissions from its operational energy use by 40 per cent by the year 2010.

Already, it has reduced emissions by 20 per cent from various actions, most significantly by purchasing Green Power for eight of its largest buildings.

#### *Redland Shire Council – Queensland*

Queensland's Redland Shire Council has undertaken two projects using solar powered lighting. It contracted Orion Solar Solutions to supply and fit marine navigation lights in Council's waterways in Moreton Bay and to supply and install ten self contained solar powered bollards to illuminate the pathway of a major Council park.

The units were installed in minutes, requiring no trenching for power cables and the lights switch on automatically at dusk and off at dawn. With virtually no maintenance and no running costs, the bollards are a fraction of the cost of traditional hard-wired electrical bollards.

In another project, a GI-100 solar powered LED lighting system was installed to illuminate a public easement between a residential street and a shopping centre. The system is frequently used to illuminate bus shelters, picnic sites and other outdoor facilities.

#### **Issues and options considered:**

Pros of solar power technology: It is a "green" source of energy that effectively reduces carbon emissions and energy costs, creates potential savings in the future and contributes to an overall healthier environment.

Cons of solar power technology: It can be considered by some as visually unattractive, considerably expensive to retrofit and unbeneficial to pursue in the near future due to up-and-coming technologies that are more efficient and less expensive.

#### Corporate opportunities for solar energy use

Solar energy systems are not a form of technology that many local governments have introduced or utilised to date. Therefore it is difficult to compare the approaches of other Councils in their uses of solar technologies.

Some suggestions for potential solar energy applications at the City include:

- *Photovoltaic cells on Council buildings:* This will be a considerably expensive project, as current rebates and funding do not target local governments. Also, more efficient and less expensive technologies will be available in the near future, so to commit to retrofitting projects now may not be a financially sound decision.
- *Solar bore pumps:* The use of this technology for the City's bores is currently not a financially viable option given the high cost associated with the systems. Continuing investment and improvements in the area of solar power is likely to reduce the cost of these systems in the future.
- *Solar power lighting:* Solar power lighting can either be connected to the grid or can operate off-grid with the use of batteries. The application of this technology has been limited to off-grid areas where the cost of extending the grid is prohibitively high; the economic distance for cabling is 400m. However, there are still significant capital costs associated with installation whether it is on or off-grid.

### Community opportunities for solar energy use

- *Community awareness:* Some may argue that the most appropriate role for local governments to play regarding solar power systems is to raise community awareness about the technology. This may include: the production of information sheets explaining how the technology works, the types of systems available for residents to install in their homes, a system for fast-tracking building approvals for solar technology installations and guidelines that outline the necessary process for obtaining building approval for system installations.
- *Installation rebates:* In light of the current \$8,000 rebate the Federal Government is offering residents to install solar power technology in their homes, it would seem unnecessary for the City to further subsidise any residential installation costs. The limited amount of money the City would be able to rebate would not seem worthwhile pursuing if it would do little in the way of encouraging residents to install the expensive technology.

### **Link to Strategic Plan:**

Objective: To plan and manage our natural resources to ensure environmental sustainability.

Strategy: Further develop environmentally effective and energy-efficient programs.

### **Legislation – Statutory Provisions:**

Not Applicable.

### **Risk Management considerations:**

The advancement of solar technology is rapid. It would therefore be prudent for the City to further investigate new technologies before committing to solar power projects that may be quickly superseded.

### **Financial/Budget Implications:**

Most of the funding available from government departments and agencies to purchase and install solar power systems target households, community buildings, off-grid areas (remote Australia), technology development, schools and State Government agencies.

The only current grant to have any applicability to the City is the Sustainable Energy Development Office (SEDO) Grants Program. If the City decided to implement a community-based project to “raise community awareness of ways to reduce energy use and increase the use of renewable energy”, then it may be eligible for a \$50,000 grant from SEDO. The only way to achieve eligibility would be to install community buildings (namely the City Library or Council Building) with solar energy systems that incorporate an education component accessible to all community members. The next funding round is likely to be in February 2008.

Installing the systems on the Administration building would not attract the grant as it is not a building considered accessible to the community. This is unfortunate in that the Administration building uses the greatest amount of energy out of all of the Council-owned buildings. If the City wished to go ahead with the installation of solar energy systems in the Administration building, it would most likely be at the City's cost.

Should the City wish to investigate the use of solar power technologies on its own buildings, a feasibility study will most likely be required, which will incur a significant cost to the City.

**Policy Implications:**

Utilising solar energy systems at the City will further support the City's Sustainability Policy by achieving objective 5: "show leadership and community influence by demonstrating commitment and the benefits of improved sustainable practices".

**Regional Significance:**

Not Applicable.

**Sustainability Implications:**

Should the City chose to employ solar energy systems, the result will be a significant reduction in greenhouse gas emissions which will contribute to an overall healthy environment.

**Consultation:**

Consultation with the Sustainable Energy Development Office was undertaken to determine the City's eligibility for grants and funding for the purchase and installation of photovoltaic modules on the City's buildings.

**COMMENT**

If the City were to install photovoltaic cells to its buildings at its own expense, connecting to the integrated power grid may offset the initial start-up costs, as the City would be saving in the long-term through heavily reduced non-renewable energy consumption. It is difficult to determine how long offsetting would take and as such, a consultant would be required to calculate the necessary cost benefits.

The City's Draft Greenhouse Action Plan identifies solar power lighting as a key area for investigation. The City has recently applied for a \$50,000 grant from the Australian Greenhouse Office to undertake a joint feasibility study with the City of Wanneroo for renewable energy lighting at key recreation areas around Lake Joondalup. The Joondalup Energy Team consisting of representatives from relevant business units across the City will facilitate the implementation of the Draft Greenhouse Action Plan and any investigations into renewable energy.

**ATTACHMENTS**

Attachment 1

Diagrams

**VOTING REQUIREMENTS**

Simple majority.

## OFFICER'S RECOMMENDATION

That the Sustainability Advisory Committee NOTES the report and recommends that Council:

- 1 CONTINUES to undertake its investigations into the potential for solar energy;
- 2 RAISES awareness in the community by providing relevant information and encouragement for residents and businesses to consider installing solar systems in their homes and business premises.

Director, Governance & Strategy provided an overview of the Report. Discussion ensued.

**MOVED Cr Magyar SECONDED Mr Will Carstairs that the Sustainability Advisory Committee NOTES the report and recommends that Council:**

- 1 CONTINUES to undertake its investigations into the potential for solar energy;**
- 2 RAISES awareness in the community by providing relevant information and encouragement for residents and businesses to consider installing solar systems in their homes and business premises;**
- 3 LISTS for consideration in its 2008/09 draft budget, \$50,000.00 for detailed planning of retro fitting the Council's Administration Building, Council Chambers Building and the Library at Boas Avenue, Joondalup, with solar and/or wind power energy collection systems to a level which would receive a five or six star rating under the Green Star Rating System run by the Green Building Council of Australia.**

The Motion was Put and

**CARRIED (5/0)**

In favour of the Motion: Crs John, Magyar and Fishwick, Mr W Carstairs, Ms W Herbert

## **ITEM 2 KEY PERFORMANCE INDICATORS FOR REDUCING THE CITY'S OIL CONSUMPTION - [00906]**

**WARD:** All

**RESPONSIBLE  
DIRECTOR:** Mr Ian Cowie  
Governance and Strategy

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## PURPOSE

To provide the Sustainability Advisory Committee (SAC) with information on potential key performance indicators for reducing the City's oil consumption; how these can be incorporated into the broader environmental reporting framework and a proposed approach for how on-ground action can be taken to reduce the City's oil consumption.

## **BACKGROUND**

At its meeting on 19 July 2007, the Sustainability Advisory Committee requested that a report be drafted on the establishment of key performance indicators (KPIs) in relation to reducing the City's oil consumption.

This request was raised in response to a report on the Oil Depletion Protocol presented at the 19 July 2007 meeting. The Oil Depletion Protocol commits countries or organisations to reduce oil consumption by the world oil depletion rate. This equates to at least 3% per year.

## **DETAILS**

The City is in the process of finalising and adopting two key environmental documents: the Draft Environment Plan 2007 – 2011 and the Draft Review Greenhouse Action Plan 2007 – 2010. The Environment Plan provides an overarching framework for the City's environmental strategies and actions to ensure environmentally sustainable management of its natural assets. The Greenhouse Action Plan provides specific direction for reducing the City's greenhouse gas emissions and includes actions relating to vehicles and transportation for both the corporate and community sectors.

The establishment of KPIs for the reduction of oil consumption will be included within the broader framework of establishing KPIs for the Environment Plan and the Greenhouse Action Plan. This will provide the basis of an annual State of the Environment Report for the City.

### **Issues and options considered:**

#### Key Performance Indicators

The City reports progress annually on key performance indicators through its Strategic Plan Annual Performance Report. Each KPI is identified as an economic, environmental or social measure. KPIs in the 2005/06 report that relate specifically to the environment include:

- Level of community satisfaction with performance on conservation and environmental management;
- Level of community satisfaction with the City's food and pollution control services;
- Total tonnes of greenhouse gas emissions abated by Council programs and operations; and
- Total reduction of residential waste to landfill generated by the municipality.

These KPIs are broad, representing the broad objectives and strategies of the City's Strategic Plan. The reduction of the City's oil consumption, while not specifically identified, is a part of the total tonnes of greenhouse gas emissions abated. Note that the existing KPIs will be reviewed and a new set of KPIs will be developed inline with the new Strategic Plan.

#### Implementation and Reporting Framework

Once the Environment Plan and Greenhouse Action Plan are finalised and adopted an implementation and reporting framework will be developed. This will include setting timelines and priority for implementation; assigning responsibilities for actions;

identifying key performance indicators and developing a reporting schedule to monitor implementation and performance.

The establishment of KPIs will be crucial to the effective implementation of these Plans. KPIs should be focused on measurable outcomes and not just outputs. KPIs will be identified for all the actions in the Environment Plan and Greenhouse Action Plan. In relation to the vehicle and transportation actions KPIs could include:

- Number of fleet vehicles;
- Size of vehicles (engine size);
- Kilometres travelled; and
- Consumption of different fuels (petrol, gas, diesel etc.)

The Implementation and Reporting Framework, in particular the KPIs, will provide the basis for an annual State of the Environment Report for the City. This State of the Environment Report will communicate to the wider community the progress made in the implementation of actions and improvements in the quality of the local environment.

#### Past and Current Transport Measures

The City, through the Cities for Climate Protection Program (CCP), has already undertaken a number of initiatives that relate to the reduction of oil consumption. These include:

- Adoption of the TravelSmart program to encourage increased use of public transport, walking and cycling;
- Active encouragement of sustainable transport options for the community, for example the introduction of the CAT bus for inner City travel;
- Purchase of two hybrid cars last year with a further two budgeted for purchase this year;
- Reduction in the size of the vehicle fleet;
- Reduced the size of the Executive fleet;
- Purchase of bicycles, which are available for staff to use to travel to and from inner City business meetings.

Transport related actions within the Draft Greenhouse Action Plan, which will be implemented over the next four years include:

- |           |   |
|-----------|---|
| Action 15 | Continue to introduce vehicles that emit less greenhouse gases when replacing stock.  |
| Action 16 | Implement the City's Green Transport Plan in order to improve the City's car pooling system and provide staff with advice on greener driving. |
| Action 28 | Continue to pursue opportunities to increase parking and public transport options through negotiations with the State Government.             |
| Action 29 | Undertake a review of the City of Joondalup Bike Plan.  |
| Action 30 | Develop and implement a TravelSmart to Schools program.   |
| Action 31 | Finalise the rollout of the Joondalup TravelSmart household program and seek further funding to continue the program.                         |

### CCP Sustainable Transport Project

Greenhouse gas emissions from transport can be a significant contributor to a local government's emissions profile for both the corporate and community sector. The International Council for Local Environmental Initiatives (ICLEI) under the framework of the Cities for Climate Protection (CCP) has developed the Sustainable Transport Project (STP) to assist Councils in addressing this challenging area.

The STP provides systems and tools that assist local governments to:

- Analyse and interpret a City's approach to sustainable transport against national best practice;
- Identify regional and local opportunities to support sustainable transport;
- Realise these opportunities through adjustments to policy and programs;
- Refine quantification methods and develop a business case for sustainable transport initiatives;
- Add to an information base of challenges and successful strategies; and
- Strengthen networks with other local governments and transport stakeholders.

The STP is an Advancing Action Project, which has been trialled for the past year with selected CCP Plus Councils in Queensland and New South Wales. The project is now being reviewed by ICLEI who is going to develop a range of tools and employ a fulltime project officer to support CCP Plus councils across Australia in the implementation of the STP. It is expected that participation in this project will become widely available in 2008 – 2009.

Participation in the Sustainable Transport Project will include the completion of five milestones, similar to that of the CCP program. Through this structure the City will: identify priority areas for improvement in relation to sustainable transport; establish priority actions within those areas; plan for their implementation and then implement and report on the actions.

Milestone 1	<i>Gap Analysis</i> – Assess existing actions and highlight opportunities and areas for improvement
Milestone 2	<i>Set Goals</i> – Identify priority goals based on the outcomes of the gap analysis
Milestone 3	<i>Sustainable Transport Action Plan</i> – development of an action plan based on outcomes of milestone 1 & 2
Milestone 4	<i>Implementation</i> – implement actions identified in the plan
Milestone 5	<i>Review the plan</i> – re-strategise if necessary

Key outcomes from participating in the Sustainable Transport Plan will be:

- 1 A review and analysis of the City's performance across nine components: policy, organisational issues, plans and strategies, parking scheme/strategy, traffic calming, cycling and walking, public transport, mobility management, and council operations.
- 2 A Sustainable Transport Action Plan that provides prioritised actions for the improvement of sustainable transport options for both the corporate and community sectors.



**Link to Strategic Plan:**

Outcome: The City of Joondalup is environmentally responsible in its activities.

Objective: 2.1 To plan and manage our natural resources to ensure environmental sustainability.

Strategies: 3.1.2 Further develop environmentally effective energy-efficient programs.

**Legislation – Statutory Provisions:**

Not Applicable.

**Risk Management considerations:**

The risks associated with the introduction of key performance indicators include a lack of resources for the corresponding monitoring procedures to be put in place.

**Financial/Budget Implications:**

There will be administrative costs associated with the monitoring of key performance indicators.

**Policy Implications:**

Not Applicable.

**Regional Significance:**

Not Applicable.

**Sustainability Implications:**

The development of effective KPIs and associated monitoring, will improve our management and consumption of finite resources.

**Consultation:**

Not Applicable.

**COMMENT**

Actions for reducing oil consumption are currently incorporated into the City's Draft Environment Plan and Greenhouse Action Plan. KPIs for reducing oil consumption should be developed within the framework of KPI reporting for the Environment Plan and Greenhouse Action Plan. The KPIs for these Plans will then form the basis of an annual State of the Environment Report for the City.

Participation in the Sustainable Transport Project will strengthen and broaden the City's actions in relation to transport, including reduction of oil consumption. The STP utilises a well-tested milestone framework and provides essential support to local governments including templates, case studies, and other resources and importantly can assist with monitoring and quantification. This kind of support is not available with the Oil Depletion Protocol. Also remaining within the CCP framework will avoid the duplication of actions or additional reporting requirements.

**ATTACHMENTS**

Nil.

**VOTING REQUIREMENTS**

Simple majority.

**OFFICER'S RECOMMENDATION**

That the Sustainability Advisory Committee NOTES the report and recommends that Council:

- 1 INCORPORATES Key Performance Indicators for the City's oil consumption into the Implementation and Reporting Framework for the Environment Plan 2007 - 2011 and Greenhouse Action Plan 2007 – 2010;
- 2 CONSIDERS participating in the Cities for Climate Protection Sustainable Transport Project in 2008-09, if available.

Director, Governance & Strategy gave an overview of the Report. Discussion ensued. The Manager, Strategic Development gave a brief update on the 'Green Transport Plan'.

**MOVED Cr Magyar SECONDED Cr Fishwick that the Sustainability Advisory Committee NOTES the report and recommends that Council:**

- 1 INCORPORATES Key Performance Indicators for the City's oil, natural gas and electricity consumption into the Implementation and Reporting Framework for the Environment Plan 2007 - 2011 and Greenhouse Action Plan 2007 – 2010;**
- 2 CONSIDERS participating in the Cities for Climate Protection Sustainable Transport Project in 2008-09, if available.**

**The Motion was Put and**

**CARRIED (5/0)**

**In favour of the Motion:** Crs John, Magyar and Fishwick, Mr W Carstairs, Ms W Herbert

### ITEM 3                      FUTURE        SUSTAINABILITY        ADVISORY COMMITTEE STRUCTURE - [00906]

**WARD:** All

**RESPONSIBLE  
DIRECTOR:** Mr Ian Cowie  
Governance and Strategy

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#### PURPOSE / EXECUTIVE SUMMARY

To provide the Sustainability Advisory Committee (SAC) with information on the merit of the City establishing a Sustainability Forum system, to enable sustainability issues to be workshopped with concerned residents.

#### BACKGROUND

A Review of Advisory Committees report was presented at the 10 October 2006 Council meeting (Attachment 1 refers). It was resolved that Council:

- 1        *ACCEPTS that the operating arrangements for Conservation Advisory Committee, Sustainability Advisory Committee and Seniors' Interest Advisory Committee be reviewed to achieve greater community engagement and the provision of the most comprehensive and highest quality advice to Council;*
- 2        *CONSIDERS this matter further at a Strategy Session with a follow up Report to be provided to Council;*
- 3        *SUPPORTS the development of a training package to be provided to new Committee members;*
- 4        *REFERS Report CJ174-10/06 to the Committees for their information and comment.*

The report was considered by SAC at its 8 February 2007 meeting (Attachment 2 refers). The SAC resolved that:

- "1        The Sustainability Advisory Committee NOTES Council Report CJ174-10/06 Review Of Advisory Committees of the Council;*
- 2        The Sustainability Advisory Committee advises Council that it wishes to retain its current committee format, with a reduction of members to 11, until the October 2007 local government elections;*
- 3        The Sustainability Advisory Committee reconsiders different committee structure models at its last meeting prior to the October 2007 local government elections."*

In addition, SAC requested a report on the merit of the City establishing a Sustainability Forum system, to enable major sustainability issues to be workshopped with concerned residents.

## **DETAILS**

To improve the effectiveness of the City's consultation process on sustainability issues and to build the capacity of the community to participate in sustainability issues, the establishment of Sustainability Forums is proposed.

The Sustainability Forums would be similar to the format used by the City for its business forums, which were established as a mechanism to raise awareness of the City's role in economic development for Joondalup. Three successful forums were held in 2006/07, with 88, 120 and 178 businesses and stakeholders attending the forums. (Note: the last forum was jointly held with City of Wanneroo). A further three forums are proposed for 2007/08 with improved opportunities for interaction and two-way communication within the forums.

The benefits and disadvantages of establishing the Sustainability Forums are considered below. To provide a clearer idea of how the Sustainability Forums may operate, an outline of a hypothetical Sustainability Forum is attached (Attachment 3 refers).

### **Benefits:**

- Potential to reach a larger percentage of the community;
- Potential to reach a broader cross-section of the community;
- Is a mechanism to inform the community about sustainability issues and the City's sustainability initiatives;
- Can include high-profile guest speakers to increase participation rates;
- Forums will enable a two-way conversation between the City and the community;
- Provides opportunity for the community to participate in the City's consultation processes in a meaningful way;
- Will build the capacity of the community to participate in sustainability issues and empower them so that they can make a difference;
- Is a mechanism for gauging the knowledge, attitudes and needs of the broader community in relation to sustainability;
- Will provide information that is invaluable for ensuring the City's sustainability initiatives are relevant and meet the needs of the broader community;
- Can be used to generate ideas for new initiatives and projects; and
- Can be used to develop a network of concerned citizens that can be informed on an ongoing basis through a newsletter or email about the City's sustainability initiatives.

### **Disadvantages**

- Will require greater resources; and
- Will meet less often than SAC does presently.

### **Issues and options considered:**

Four potential structures for the consultation of sustainability issues have been considered:

**Option 1    Sustainability Forums only**

Sustainability Forums would be held on a regular basis, possibly three times per year (with meetings set following finalisation of a suitable agenda) to workshop sustainability issues with concerned residents. The Sustainability Forums would supersede SAC and SAC would cease to operate.

**Option 2    Sustainability Forums and items referred to SAC as needed**

Sustainability Forums would be held as in option 1 to workshop sustainability issues with concerned residents. SAC would continue to operate on an as needed basis. Specifically SAC would meet only when Council refers items to SAC for their consideration.

**Option 3    Sustainability Advisory Committee only**

The structure and terms of reference of the SAC would remain the same, with the SAC meeting on a regular basis (Attachment 4 refers). However, there would be no sustainability forums.

**Option 4    Sustainability Forums and SAC**

Sustainability Forums would be held as in option 1 to workshop sustainability issues with concerned residents and the structure and terms of reference of the SAC would remain the same, with the SAC meeting on a regular basis. This option, in particular, would require the endorsement of Council as it would involve additional resources.

**Link to Strategic Plan:**

Outcome:            The City of Joondalup is environmentally responsible in its activities.

Objective 2.1:        To plan and manage our natural resources to ensure environmental sustainability.

**Legislation – Statutory Provisions:**

Not Applicable.

**Risk Management Considerations:**

The City does not have the resources to manage both Sustainability Forums and the SAC under its current structure.

**Financial/Budget Implications:**

There will be administrative costs associated with coordination of Sustainability Forums. Administrative costs are currently associated with the coordination of the SAC.

**Policy Implications:**

Not Applicable.

**Regional Significance:**

Not Applicable.

**Sustainability Implications:**

Sustainability issues are at the forefront for the City and it is considered appropriate that the greatest base for community consultation for these issues be achieved.

**Consultation:**

Not Applicable.

**COMMENT**

It is considered that the establishment of Sustainability Forums would enable the City to undertake more effective and participatory consultation on issues of importance. Importantly it will also build the capacity of the community to participate in sustainability issues.

The Sustainability Forums offers significant benefits for both the City and the community with the ultimate outcome that the City can ensure future environmental actions and initiatives are aligned with community needs and wants.

The City participates in the International Council for Local Environmental Initiatives (ICLEI) Cities for Climate Protection (CCP) Program and Water Campaign. Both these programs have a large community component including setting reduction targets for the community sector and identifying actions and strategies to help the community to reduce their consumption. To date the City's effectiveness in engaging the community in these programs has been somewhat limited. The Sustainability Forums will enable more effective community engagement, improving the implementation of these programs.

**ATTACHMENTS**

Attachment 1	Review of Advisory Committees of Council
Attachment 2	Response to Review of Advisory Committees of Council
Attachment 3	Outline for a theoretical Sustainability Forum
Attachment 4	Possible Future Meeting Dates of the SAC

**VOTING REQUIREMENTS**

Simple majority.

**OFFICER'S RECOMMENDATION**

That the Sustainability Advisory Committee NOTES the report and RECOMMENDS to Council that in future Council focus on holding Sustainability Forums for the broader community to workshop sustainability issues with concerned residents (as outlined in option 1).

Director, Governance & Strategy gave an overview of the Report. Discussion ensued.

**MOVED Cr Magyar SECONDED Mr Will Carstairs that the Sustainability Advisory Committee NOTES the report and RECOMMENDS to Council that:**

- 1 in future Council holds well advertised Sustainability Forums for the broader community approximately three (3) per year to workshop sustainability issues with residents and businesses;**
- 2 the Sustainability Advisory Committee continues to operate in its current format of Elected Members and community members holding approximately 3 meetings per year in months following sustainability forums.**

**The Motion was Put and**

**CARRIED (5/0)**

**In favour of the Motion:** Crs John, Magyar and Fishwick, Mr W Carstairs, Ms W Herbert

## **ITEM 4 THERMAL WEED CONTROL**

**WARD:** All

**RESPONSIBLE  
DIRECTOR:** Mr Ian Cowie  
Governance And Strategy

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### **PURPOSE/EXECUTIVE SUMMARY**

To present the report on Thermal Weed Control to the Sustainability Advisory Committee for comment.

### **BACKGROUND**

At its meeting on 28 August 2007, Council resolved (*CJ170-08/07 refers*), inter alia, to:

*“Refers the report on Thermal Weed Control in the City of Joondalup to the Conservation Advisory Committee and the Sustainability Advisory Committee for comment.”*

This report seeks to address the request outlined in the abovementioned recommendation.

The consideration of thermal weed control arose from a 137-signature petition which was presented to Council in May requesting the use of hydrothermal weed control technology instead of chemical spraying wherever possible and requesting a report being presented to Council on this matter.

It should be noted that Local Governments have the responsibility to control weed growth on land they manage. In some cases this extends to the control of noxious weeds which are required to be controlled by law. These requirements form part of the operational maintenance tasks associated with road and land management. The City of Joondalup currently controls weed growth in a range of locations including pathways, road verges/medians, public gardens, grassed parkland and bushland. Weeds in the main are controlled using a range of chemical based herbicides with a lesser amount being removed by hand or mechanical methods. This work is undertaken using Council work teams, contractors, and in natural areas volunteers assist the City with this work.

## DETAILS

The City commissioned a report to be written by John Banks (Arboriculturist) and Graeme Sandral (Agronomist).

The brief for the compilation of the report sought the following analyses:

- Compare the cost of herbicide based weed control and thermal based weed control;
- Examine the advantages and disadvantages of both methods;
- Identify the most suitable circumstances for the use of these technologies.

The following is a summary of the main findings contained within the report which is found at Attachment 1:

*“As a generalisation, herbicides are more cost effective and its use achieves better kill rates than thermal weed control methods. The cost advantages and speed of application associated with herbicides indicate that they are suitable for large-scale operations;*

*Thermal weed control methods are best utilised where environmental or health issues are significant and where off site damage to non-target plants is a high risk. The costs and speed at which thermal weed control can be undertaken may limit its scale of operation. Weed control efficiency is improved if the frequency of thermal weed control is no longer than six weeks apart and, where there is an occurrence of perennial weeds which are hard to kill, hand weeding or herbicide spot spraying may be necessary on second cycle treatments.”*

## Issues and options considered:

The City has a number of options it may choose to take:

- 1 Undertake all weed control using chemical and mechanical methods (hand weeding);
- 2 Use a combination of chemical, thermal weed and mechanical control. Using each technology where appropriate;
- 3 Use thermal and mechanical weed control methods only.



**Link to Strategic Plan:**

Key Focus Area

Caring for the environment.

**Outcomes**

The City is environmentally responsible in its activities.

**Legislation – Statutory Provisions:**

Control of declared noxious weeds – Division 3, Section 42 – Agriculture and Related Resources Protection Act 1976.

**Risk Management considerations:**

Not Applicable.

**Financial/Budget Implications:**

The report outcomes indicate that the cost of thermal weed control relative to traditional herbicide methods is up to 2 times more expensive per treatment, and the kill rate on some perennial weeds will be lower. When translating this into yearly weed control the thermal treatment will require 1.5 to 2 times more applications as compared with herbicide control. Therefore, on a yearly basis the additional cost of the thermal weed control treatment may be up to 3 to 4 times more expensive than herbicide application. This is due to the higher cost per application and the higher number of applications required to achieve the same results. The City's expenditure for weed control for the last 3 contractual periods is on average \$460,000 per annum for weed control external to natural areas.

**Policy Implications:**

Not Applicable.

**Regional Significance:**

Not Applicable.

**Sustainability Implications:**

Not Applicable.

**Consultation**

Council is seeking input on the consultant's report from relevant advisory committees.

**COMMENT**

Not Applicable.

## ATTACHMENTS

Attachment 1                      Report on Weed Control Using Hot Water / Steam and Herbicides in the City of Joondalup

## VOTING REQUIREMENTS

Simple majority.

## OFFICER'S RECOMMENDATION

That the Sustainability Advisory Committee NOTES the report on Thermal Weed Control shown as Attachment 1 and provides comment to Council on the report.

Director, Governance & Strategy gave an overview of the Report. Discussion ensued.

**MOVED Cr John SECONDED Cr Fishwick that the Sustainability Advisory Committee:**

- 1        NOTES the report on Thermal Weed Control shown as Attachment 1 to this Report;**
- 2        that Council needs to develop a Weed Control Strategy as part of its Environmental Plan, the Weed Control Strategy should be based on the principles of Integrated Weed Management, which includes the aim of reducing the reliance on herbicides.**

**The Motion was Put and**

**CARRIED (5/0)**

**In favour of the motion:** Crs John, Magyar and Fishwick, Mr W Carstairs, Ms W Herbert

## MOTIONS OF WHICH PREVIOUS NOTICE HAS BEEN GIVEN

Nil.

## REQUESTS FOR REPORTS FOR FUTURE CONSIDERATION

- 1        A review of the report prepared by the WA Government on addressing alcohol problems at a community level in order for SAC to identify potential ideas and means by which Council can support the State's initiatives.

The Presiding Person thanked staff and committee members for their help and assistance with this committee.

**CLOSURE**

There being no further business, the Presiding Person declared the Meeting closed at 2055 hrs; the following committee members being present at that time:

Cr Michele John  
Cr Steve Magyar  
Cr Russ Fishwick  
Ms Wendy Herbert  
Mr Will Carstairs