

# AGENDA

Sustainability Advisory Committee

## MEETING OF THE SUSTAINABILITY ADVISORY COMMITTEE

TO BE HELD ON



**THURSDAY, 19 JUNE 2008**  
commencing at 6 p.m.

in Conference Room 2

JOONDALUP CIVIC CENTRE,  
BOAS AVENUE, JOONDALUP

**Note:**

**Clause 77 of the City's Standing Orders Local Law 2005**  
states:

"Unless otherwise provided in this local law, the provisions of this local law shall apply to meetings of committees with the exception of:

- (a) clause 29 (Members seating;) and
- (b) clause 54 (Limitation on members speaking.)"



**GARRY HUNT**  
Chief Executive Officer  
13 June 2008

[www.joondalup.wa.gov.au](http://www.joondalup.wa.gov.au)



## CITY OF JOONDALUP

Notice is hereby given that a meeting of the **SUSTAINABILITY ADVISORY COMMITTEE** will be held in Conference Room 2, Joondalup Civic Centre, Boas Avenue, Joondalup on **Thursday, 19 June 2008** commencing at **6 p.m.**

GARRY HUNT  
Chief Executive Officer  
13 June 2008

Joondalup  
Western Australia

## AGENDA

### Committee Members

Cr Brian Corr	Presiding Person
Cr Mike Norman	Deputy Presiding Person
Cr Albert Jacob	
Cr Russ Fishwick	
Mr Steve Magyar	Community Representative
Mr Rainer Repke	Community Representative
Mr Alan Green	Community Representative
Mr Brett Dorney	Community Representative
Mr John Chester	Community Representative
Ms Janina Pezzarini	Community Representative
Mr Peter Jacoby	Community Representative
Ms Ute Goeft	Community Representative

### Terms of Reference

- *To recommend to the City of Joondalup Council on policy, advice and appropriate courses of action that promote sustainability, which is (1) environmentally responsible, (2) socially sound and (3) economically viable*
- *To provide advice to Council on items referred to the Committee from the City of Joondalup administration*

### DECLARATION OF OPENING

### APOLOGIES/LEAVE OF ABSENCE

**CONFIRMATION OF MINUTES**

MINUTES OF THE SUSTAINABILITY ADVISORY COMMITTEE HELD 17 APRIL 2008

**RECOMMENDATION**

**That the minutes of the meeting of the Sustainability Advisory Committee held on 17 April 2008 be confirmed as a true and correct record.**

**ANNOUNCEMENTS BY THE PRESIDING PERSON WITHOUT DISCUSSION****DECLARATIONS OF INTEREST****IDENTIFICATION OF MATTERS FOR WHICH THE MEETING MAY SIT BEHIND CLOSED DOORS****PETITIONS AND DEPUTATIONS****REPORTS**

Item 1	North West Corridor Economic Development And Transport Workshops	Page 4
Item 2	Opportunities For Solar Power	Page 9
Item 3	Energy Efficient Street Lighting	Page 14
Item 4	Coastal Stormwater Outfalls	Page 18

**MOTIONS OF WHICH PREVIOUS NOTICE HAS BEEN GIVEN****REQUESTS FOR REPORTS FOR FUTURE CONSIDERATION****CLOSURE**

**ITEM 1      NORTH    WEST    CORRIDOR    ECONOMIC  
DEVELOPMENT AND TRANSPORT WORKSHOPS  
– [06580]****WARD:** All**RESPONSIBLE** Mr Ian Cowie**DIRECTOR:** Governance and Strategy

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**PURPOSE**

To provide an overview of the key outcomes arising from the Economic Development and Transport Workshops recently held under the auspices of the North West Corridor Coordinating Committee (NWCCC).

**BACKGROUND**

At its meeting on 21 February 2008, the Sustainability Advisory Committee requested a report on the outcomes of the North West Corridor Coordinating Committee's Workshop on employment opportunities for the North West Corridor and the Alkimos region.

The NWCCC was created by the State Government in October 2006 to ensure that urban and economic development within the corridor is being co-ordinated, and is linked with the efficient and timely provision of state infrastructure.

Draft District Structure Plans for Yanchep-Two Rocks and Alkimos-Eglinton were submitted to the City of Wanneroo by their proponents in 2007. The City of Wanneroo resolved not to approve these structure plans after they had been advertised for public comment because it was of the view that proper assessment of the employment and transport implications needed to be done within a clear and robust regional context.

To resolve the identified issues two workshops were subsequently hosted by the Department for Planning and Infrastructure (DPI) and Cities of Joondalup and Wanneroo under the auspices of the NWCCC. The workshops were designed to deal with regional economic development, employment and transport issues in order to further progress the review of the North West Corridor Structure Plan. A key outcome of the workshops was to provide a framework within which the assessment of the draft District Structure Plans for Yanchep-Two Rocks and Alkimos-Eglinton could take place.

**DETAILS**

The two workshops were held at the City of Wanneroo and the City of Joondalup respectively, and involved representation from State Government Departments, Developers, Consultants, and Politicians. The Workshops were opened by Ken Travers MLC, Co-Chairperson of the NWCCC.

A report has subsequently been released by the NWCCC highlighting the key outcomes arising from the two workshops.

***Economic Development Workshop – 26 March, City of Wanneroo*****Background**

According to the 2006 Census of Population and Housing, the North West Corridor had 132,495 employed residents and only 56,302 local jobs. The ratio of jobs to employed residents is referred to as 'Employment Self-Sufficiency' and the ratio for corridor is currently 42.5%. In other words, this means that there are 42.5 jobs for every 100 working residents. The key issue is that this resulted in 80,000 skilled workers having to commute outside the region to areas such as Perth CBD. This has significant sustainability and infrastructure capacity implications that will continue to exacerbate as the corridor continues to grow northwards.

The target Employment Self-Sufficiency for the corridor is 70%. However, the high rate of population growth coupled with the Employment Self-Sufficiency ratio that is currently being achieved indicates that this will be a challenging target. This requires a concerted and coordinated effort from all stakeholders, particularly the Cities of Wanneroo and Joondalup along with its State partners the DPI and the Department of Industry and Resources (DOIR).

**Purpose**

The purpose of the economic development workshop was to:

- Ensure common understanding of economic development and employment issues within the North West Corridor;
- Seek convergence of thinking on employment targets;
- Work towards alignment on roles and functions for each activity centre; and
- Gain a sense of strategy and some clarity on the potential roles of the various Government agencies and the private sector.
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**Presentations**

The following presentations were delivered as part of the workshops:

- Employment and Economic Development in the North West Corridor – Michael Chappell, Pracsys;
- Activity Centres Strategy – Chris O'Neill, DPI;
- DPI perspective – Eric Lumsden, Director General;
- Local government perspective – Charles Johnson, Chief Executive Officer, City of Wanneroo;
- Land developer perspective (representing proponents of major land developments within Yanchep-Two Rocks, Alkimos-Eglinton and Neerabup) – Fiona Weigall, Economic Development Manager, Landcorp.

**Key Outcomes**

The following workshop outcomes and suggestions were recorded:

1. Agreement was reached that the assessment of the District Structure Plans for Alkimos-Eglinton and Yanchep-Two Rocks would be done collaboratively

between DPI and City of Wanneroo. It was seen that a collaborative approach would result in a streamlined approach to planning processes.

2. The Workshop identified that there appeared to be consensus on the high level vision for the NW Corridor to be developed on sound sustainability principles, however there may not be alignment around some significant issues. From a survey of participants, it was suggested that there was a need to quantify alignment or the amount of consensus between stakeholders on major issues.
3. There was general agreement that a joint government private sector Governance (or alliance) Framework should be established and that the DOIR should take a lead role. This leadership structure is needed to drive employment improvement for the NW Corridor. A clear vision, structure and process are required with the ability to monitor and evaluate progress. There was a strong sense exhibited by participants that the “process” to improve employment self sufficiency is more important than the establishment of aspirational targets.

### ***Transport Workshop – 30 April, City of Joondalup***

#### **Background**

The extension of the freeway, Marmion Avenue and the rail line are vital for the growth of the North West Corridor. However, the key issue associated with enhancing the transport infrastructure is timing.

#### **Purpose**

The purpose of the transport workshop was to:

- Understand the strategic regional transport issues and challenges;
- Understand the transport requirements from the perspective of:
  - Infrastructure needs; and
  - Staging and relationship between land release, economic development and timing of transport infrastructure;
- Support a flexible and pro-active approach to planning; and
- Develop the case for government support of timely infrastructure delivery.

#### **Presentations**

The following presentations were delivered as part of the workshops:

- Strategic Regional Roads – Mr Paul Fourie, ARRB (Consultants to DPI);
- Rail Planning – Mr Emmerson Richardson, Sinclair Knight Merz;
- Rail Infrastructure – Mr Peter Martinovich and Mr Peter King, Public Transport Authority; and
- City Of Joondalup Perspective On The Employment and Transport Infrastructure Challenge – Mr Garry Hunt, Chief Executive Officer, City of Joondalup.

### Key Outcomes

The following workshop outcomes and suggestions were recorded:

1. An interim Policy Statement (West Australian Planning Commission Planning Policy) is needed and should include indicative requirements and staging strategy for transport and expectations for activity centre development (ie quality, hierarchy, diversity).
2. A Business Case is required to justify future transport infrastructure roll-outs. Input and discussion will be required between land developers and Perth Transport Authority on patronage estimates to develop this Business Case. The employment/economic implications will need to be considered in addition to simply focussing on transport itself. Furthermore, Network City must be part of the consideration of patronage numbers.
3. There will be a joint City of Wanneroo/DPI approval of District Structure Plans, with conditions attached relating to regional/subregional issues.

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

The report has direct relationship to key focus area of economic prosperity and growth.

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

Not Applicable.

### **Risk Management considerations:**

Not Applicable.

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

The outcomes of the NWCCC Workshops will have a significant financial impact on the State Government for the provision of major infrastructure (i.e. roads and rail).

### **Policy implications:**

The Workshops indicated that the State Government would need to develop specific policy direction for the future development of the Corridor.

### **Regional Significance:**

The NWCCC workshops directly concerned, and involved, the Cities of Joondalup and Wanneroo.

### **Sustainability implications:**

The NWCCC was formed to consider and addresses economic sustainability of the future development of the North West region.

**Consultation:**

Nil.

**COMMENT**

The NWCCC Workshops have served to provide a strategic impetus for the State Government to recognise the future growth and issues that will face the North West Corridor. The issues of employment and transport need to be foremost priorities for the State Government and this will result in further growth of the Joondalup CBD in order to provide strategic and commercial services to the future emerging economies of the region.

**ATTACHMENTS**

Nil.

**RECOMMENDATION**

**That the Sustainable Advisory Committee NOTES the key outcomes arising from the two workshops of the North West Corridor Coordinating Committee.**

**ITEM 2                   OPPORTUNITIES FOR SOLAR POWER – [59091]****WARD:** All**RESPONSIBLE** Mr Ian Cowie**DIRECTOR:** Governance and Strategy

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**PURPOSE/ EXECUTIVE SUMMARY**

The purpose of this report is to provide an update on the City's options for installing solar power technology on City buildings and promoting solar power as an energy saving measure to the community.

**BACKGROUND**

At a previous meeting of the Sustainability Advisory Committee on 13 September 2007, a report was provided which gave an overview of solar power technology, potential projects the City could undertake in relation to solar power in the future and options for the promotion of solar power as an energy saving measure to the community. This report is provided as Attachment 1. In response to the report the Committee resolved 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 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."*

Council at its meeting on 16 October 2007, when considering the report on the Minutes of the Sustainability Advisory Committee, (CJ209-10/07 refers) resolved inter alia to:-

*"REQUEST an investigation be undertaken and a subsequent report presented to Council on the amount of funding that would be required 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 high star rating under the Green Star Rating System run by the Green Building Council of Australia."*

This work is proposed to be undertaken in the coming financial year following the appointment of a specialised consultant.

At the Sustainability Advisory Committee meeting on 17 April 2008 a report was requested on:

*"The feasibility of installing a grid-connected 2kW photovoltaic system on one of the City's community buildings as a mean of showcasing the City's sustainability credentials. The report should address:*

- *The suitability of this proactive action by the City as a means of encouraging Joondalup residents to install grid-connected photovoltaic panels on their own homes;*
- *The Federal Government's current offer of a 50% rebate on the cost of such a system for local government and a rebate of 75% for private residences;*
- *The overall expenditure required by the City for the project with confirmation that the project would cost approximately \$10,000."*

Since the original solar power report was written in September last year and the recent report was requested in April of this year, the new Federal Government has presented a budget resulting in changes to the solar power rebate programs that may affect the eligibility of both Joondalup residents and the City of Joondalup itself.

## DETAILS

There are three broad options currently open to the City in relation to pursuing an increase in the use of solar power within the City and these are discussed below.

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

#### Option One: Undertake with a feasibility study

Based on the SAC motion of 13 September 2007 the Council has the opportunity to place money in the draft 2008/09 budget to conduct a renewable energy feasibility study for Council owned buildings. The 2008/09 budget is still to be approved by Council. If monies are approved it is envisaged that this Study would investigate the most viable options for renewable energy installations across the City's buildings from a range of renewable energy sources including solar and wind.

This approach would have the benefit of having a wide scope that would investigate all options for renewable energy and would not be limited by one renewable energy type or one building in particular. It would take into consideration both benefits received from greenhouse gas reduction and opportunity for community education and awareness raising as well as looking at the technical aspects of potential energy sources and installations. It can also provide a progressive plan for installing renewable energy systems on the City's buildings over the coming years. In this way the City can make an informed decision about what renewable energy installations would be the most effective and provide the most benefits, and can plan for installations as part of the Capital Works Program.

The disadvantage of this option is that installation of any renewable energy system is unlikely to occur until the 2009/10 budget year.

### Option Two: Install a solar power system on a community building

Rather than obtaining a feasibility study the City could undertake a demonstration project by installing a solar power system on a community building with the intent of achieving on-ground benefits in the short term. This again would require money to be placed in the 2008/09 budget for this specific purpose.

In previous years the Federal Government's Photovoltaic Rebate Program would provide a 50% rebate for the installation of solar power systems (up to 2.0kW) on community buildings including local government owned buildings provided the buildings were visible and accessible to the wider community. A condition of the funding was that the organisation must undertake solar electricity education, extension, promotion, interpretation and/or demonstration activities. Systems larger than 2.0kW can be installed but the rebate provided is still equivalent to 50% of the cost of a 2.0kW system.

The Federal Government has recently disbanded the Photovoltaic Rebate Program and has put in place the Solar Homes and Communities Plan. This new Plan still includes a community buildings component which provides a 50% rebate for the first 2.0kW of a new solar power system. However the guidelines for the community buildings component will not be released until July. Discussion with the Department of Environment and Heritage has advised that it is currently unknown whether the new eligibility criteria will include local government buildings and as the criteria for residential buildings has changed it is possible that the community buildings criteria could change as well.

While the City will have to wait until July to see if it is still eligible for the rebate, an initial estimate suggests the cost of an installation could be around \$11,500.

### Option Three: Focus on community awareness and education

Local Government, along with State Government and Federal Government, can take an important role in raising community awareness about the benefits of solar power, the types of solar systems that can be installed and potential rebates or subsidies that are available. The City could implement a solar power education campaign as a stand alone project or in tandem with a demonstration project. In conjunction with a demonstration project is likely to be the most effective approach as the project will generate considerable publicity and interest.

If the City were to install a solar power system it could apply for funding from the Sustainable Energy Development Office (SEDO) under their SEDO Grants Program – Community Based Projects to undertake the solar power education campaign. Up to \$50,000 can be granted to projects that '*raise community awareness of ways to reduce energy use and increase the use of renewable energy*'. This would enable the City to develop and implement an extensive community awareness and education program that could link with the solar demonstration project but also be expanded to other areas of energy and greenhouse education. There are usually two funding rounds a year with the next funding round closing in August 2008.

It is important to note that under the new Solar Homes and Communities Plan, only households that have a family taxable income of less than \$100,000 will be able to apply for the rebate of \$8/W up to 1kW (capped at \$8000). This will reduce the amount of Joondalup residents that are eligible for the rebate.

**Link to Strategic Plan:**

- Objective 2.1: To ensure that the City's natural environmental assets are preserved, rehabilitated and maintained.
- Strategy 2.1.5: The City reduces its greenhouse gas emissions and assists the public to reduce community emissions.

**Legislation – Statutory Provisions:**

Not Applicable.

**Risk Management considerations:**

Not Applicable.

**Financial/Budget Implications:**

The installation of any solar energy systems will require a budget allocation and this has not currently been budgeted for. The financial costs need to be investigated further along with potential rebates, grant funding and any associated costs such as education and interpretation activities.

**Policy implications:**

Utilising solar energy systems at the City will further support the City' 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:**

The installation of solar power technology will result in a significant reduction in greenhouse gas emissions which will contribute to an overall healthy environment.

**Consultation:**

Not Applicable.

**COMMENT**

The City has supported renewable energy through the installation of a Geothermal Heating System at Craigie Leisure Centre and the purchase of renewable energy from Landfill Power and Gas. While these initiatives have great environmental benefit and are quite innovative the City does not receive much public recognition for them. A renewable energy project where the City produces its own energy through wind and solar will be much more visible and recognised in the community. It will also contribute to the City's greenhouse gas reduction targets through the Cities for Climate Protection Program.

The City's Environment Plan and Greenhouse Action Plan both have actions that relate to increasing the amount of green power the City uses; investigating renewable energy options and educating the community to reduce energy use. All three options

presented in this report would be supported by actions in the City's Environment Plan and Greenhouse Action Plan.

While Option 2 provides good short term benefits, Option 1 would provide a planned approach that would identify projects that will achieve maximum benefits and plan for the sustained improvement of renewable energy in the City. Consequently, it is believed that the most effective approach for the City would be to undertake the feasibility study during 2008/09 and then undertake a comprehensive demonstration project and education campaign during 2009/10.

#### **ATTACHMENTS**

Attachment 1            Solar Power Technology Report (SAC meeting 13.09.07).

#### **VOTING REQUIREMENTS**

Simple Majority

#### **RECOMMENDATION**

**That the Sustainability Advisory Committee NOTES the report on opportunities for solar power and that Council has the opportunity to place monies in its budget for a renewable energy feasibility study.**

*Appendix 1 refers*

## **ITEM 3                    ENERGY EFFICIENT STREET LIGHTING – [59091]**

**WARD:**                    All

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

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### **PURPOSE/ EXECUTIVE SUMMARY**

The purpose of this report is to provide the Sustainability Advisory Committee (SAC) with further information relating to the report “Replacement of Mercury Vapour Lamps with Energy Efficient Lamps as part of the Maintenance Cycle” presented at the SAC meeting of 17 April 2008.

### **BACKGROUND**

At the meeting of 17 April 2008 a report was presented titled “Replacement of Mercury Vapour Lamps with Energy Efficient Lamps as part of the Maintenance Cycle”. The purpose of this report was to provide SAC with an overview of the feasibility of replacing mercury vapour lamps with appropriate energy efficient lamps as part of the maintenance cycle.

There was significant discussion amongst the Committee about this report and a number of questions were raised. These questions are answered below.

### **DETAILS**

Q            What type of lighting is being installed at the Burns Beach Development?

A            Metal Halide

Q            What would be the cost to the City if electricity prices doubled?

A            The table below provides additional information relating to ongoing electricity costs of different lamps.

Lamp type	80W Mercury vapour	42W Compact Fluorescent	2 * 24W T5 Fluorescent	70W Metal Halide	50W High Pressure Sodium	70W High Pressure Sodium
Current Energy Cost per annum per lamp <sup>1</sup>	\$38.14	\$19.60	\$21.30	\$32.81	\$23.44	\$26.50
Electricity cost per year (Based on 14,000 lights)	\$533,960	\$274,400	\$298,200	\$459,340	\$328,160	\$371,000
Cost per	\$1,067,920	\$548,800	\$596,400	\$918,680	\$656,320	\$742,000

year if electricity cost doubled						
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<sup>1</sup> Source: Sage Consulting Engineers, 2007

**Q** What would be the greenhouse gas savings if the City were to switch to more energy efficient lamps?

**A** The table below provides additional information relating to greenhouse gas production of different lamps.

Lamp type	80W Mercury vapour	42W Compact Fluorescent	2 * 24W T5 Fluorescent	70W Metal Halide	50W High Pressure Sodium	70W High Pressure Sodium
Tonnes of CO2/km per annum. <sup>1</sup>	1.2	0.6	0.65	1.0	0.7	1.0
Total Tonnes of CO2 based on 1,019 km of sealed roads in CoJ. <sup>2</sup>	1222.8	611.4	662.35	1019	713.3	1019

<sup>1</sup> Source: Sage Consulting Engineers, 2007

<sup>2</sup> Assumes standard of 80m spacing across the City and does not include lighting not on roads i.e. parks and carparks.

**Q** A question was raised in relation to the estimated cost of \$500 for the 2 x 24W T5 Fluorescent lamps?

**A** Pierlite Pty Ltd was contacted to provide a cost estimate of 2 x 24W T5 Streetlight fitting. They advised that they did not sell direct to the public only to wholesalers and they referred the City to a local business Advanced Electrical Joondalup.

Advanced Electrical Joondalup provided a quote of \$280 plus GST per fitting.

It is important to note that for Western Power owned and maintained infrastructure any upgrades can only use Western Power fittings and costs. The City cannot simply go ahead and purchase new components for Western Power's infrastructure.

**Q** Can copies of past energy efficient lighting reports be provided for new SAC members?

**A** Past reports are provided as Attachment 1 and 2.

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

Key Focus Area      Natural Environment

Objective 2.1: To ensure that the City's natural environmental assets are preserved, rehabilitated and maintained.

Strategy 2.1.5: The City reduces its greenhouse gas emissions and assists the public to reduce community emissions.

**Legislation – Statutory Provisions:**

Not Applicable.

**Risk Management considerations:**

Not Applicable.

**Financial/Budget Implications:**

The cost of street lighting to local government is large and any upgrades to the street lighting network will have significant financial implications. While the upgrade of street lighting will become more viable as electricity costs increase the capital outlay at this stage is extremely large.

**Policy implications:**

Not Applicable.

**Regional Significance:**

Not Applicable.

**Sustainability implications:**

Improvements in the energy efficiency of street lighting will achieve significant reductions in greenhouse gas emissions. However, any decision to attempt to change the current status quo needs to be balanced with the cost of the change.

**Consultation:**

Not Applicable.

**COMMENT**

The Bulk Lamp Replacement (BLR) program is controlled by Western Power and a local government does not have the power to change it or make Western Power change it. Thus replacing the current mercury vapour lamps with more efficient lighting as part of the BLR program could only be done with Western Power's approval.

Currently compact fluorescent and T5 fluorescent lamps are not part of Western Power's available stock and therefore the City cannot request it as part of the BLR. Even if the City decided to purchase the required T5 fluorescent lamps itself it is unlikely that Western Power would be willing to install them. Further, if the City wanted to purchase the T5 lamps and hire a contractor to install them the City would not have the authority to do so, as Western Power owns and controls the lighting infrastructure.

It is not feasible for the City to take any course of action without Western Power's co-operation. The only upgrades that the City can realistically currently pursue are using Western Power's range of fittings. Given that the issue is prevalent to the entire metropolitan area the most effective way to reach a solution is through a high level government approach including WALGA, the State Government and local politicians.

At its previous meeting the SAC requested that this matter be referred to WALGA through the meeting of the North Zone and this course action will occur at the July 2008 meeting.

## **ATTACHMENTS**

- Attachment 1      Replacement of Mercury Vapour Lamps with Energy Efficient lamps as part of the Maintenance Cycle (SAC Meeting 17.4.08).
- Attachment 2      South Australian Strategic Action Planning Guide for Sustainable Public Lighting (SAC Meeting 21.02.08)

## **VOTING REQUIREMENTS**

Simple Majority.

## **RECOMMENDATION**

**That the Sustainability Advisory Committee NOTES the additional information on street lighting provided in this report.**

*Appendix 2 refers*

**ITEM 4 COASTAL STORMWATER OUTFALLS – [34958]****WARD:** All**RESPONSIBLE** Mr Ian Cowie  
**DIRECTOR:** Governance and Strategy

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**PURPOSE/ EXECUTIVE SUMMARY**

The purpose of this report is to provide an overview of the current initiatives and progress in relation to stormwater quality and stormwater outfalls along the City of Joondalup coastline.

**BACKGROUND**

In April 2007 the Department of Water (DOW) released the report “*Contaminants in Stormwater Discharge, and Associated Sediments, at Perth’s Marine Beaches*”. This report detailed the findings of a baseline study of the types and concentrations of contaminants in and around 65 stormwater drains in the Swan Region. The drains were located within the Cities of Wanneroo, Joondalup, Stirling and Rockingham and the Towns of Cambridge and Cottesloe. The Study found that, depending on the region, site and rainfall event, concentrations can exceed recreational as well as environmental guidelines.

While the DOW report provides a good starting point it does not provide a complete picture. Not all of the City of Joondalup outfalls were tested and of the five outfalls that were tested a total of just 22 samples were taken over two winters (between 3-5 samples per site). The concentration of these contaminants is likely to vary (either above or below guidelines) at different times of the year and before or after certain rain events.

Overall, the DOW report found that the concentrations of stormwater contaminants in the City of Joondalup were comparatively low compared with other areas to the south. The following table provides details of each of the Joondalup sites, the number of samples taken and highlights for each site any tests where the average concentration of contaminants exceeded the guidelines.

It is particularly important to note that the following table shows where the average concentration of all the samples taken has exceeded the guidelines.

The DOW report did not provide individual test results so it is not possible to identify whether an abnormal reading could have influenced the average such that it exceeded the guidelines. Given that only a few samples were taken it is difficult to know if the results provide an accurate reflection of the level of contamination as this can be affected by a variety of climatic and geographical variables.

Site	Site location	No of samples	Nutrients			Total Petroleum Hydro carbons	Metals	
			NH <sub>4</sub>	TP	FRP		Lead	Iron
JND01a	Rocky outcrop at northern end of Burns Beach car park	3	X	X	X	X		X
JND01b	South end Burns Beach car park. Outlet opposite café	3		X				X
NST01	Beach outfall, Marmion Angling & Aquatic Club car park	4		X		X	X	
NST03	Beach outfall (south of Sorrento Beach – report did not give exact location)	4	X	X	X		X	X
NST04	Beach outfall (south of Sorrento Beach – report did not give exact location)	5		X			X	X
NST05	Beach outfall (south of Sorrento Beach – report did not give exact location)	3		X				X

The main types of contaminants in the City's stormwater drains were certain metals and nutrients. Contaminants from metals are most likely associated with car wear, engine oil and petrol which are associated with road and car park use.

With regard to nutrients, each of the sample sites are in areas where septic systems exist. As infill sewer has now been provided to each of these areas, this source of nutrients is likely to reduce over time. Other sources include fertiliser use in the catchment area.

It should be noted that while the above table highlights concentrations where guidelines were exceeded there were many tests in which the guidelines weren't exceeded including: bacterial concentrations (all), nutrient concentrations (Dissolved Oxidised Nitrogen Total Kjeldahl Nitrogen, Total Nitrogen) and metal concentrations (Arsenic, Cadmium, Chromium, Manganese, Mercury, Nickel).

At the Sustainability Advisory Committee meeting held on 17 April 2008 it was requested that a report be provided on “*the City's current initiatives and progress in relation to stormwater quality and stormwater outfalls along the City of Joondalup coastline*”.

## DETAILS

The City's initiative and projects in relation to coastal stormwater management are discussed below.

### Strategic Recognition

The City has recognised the importance of water quality along the coastal foreshore area and the impact that stormwater outfalls can have on this quality. One of the objectives of the City's Environment Plan is “*To ensure that effective stormwater*

*management processes are established and developed for the City's sustainable future". Key actions include:*

- Action 2.1.4 Develop a standardised method of testing the City's ocean bodies through partnerships with key government agencies to monitor changes in the quality of saltwater areas, and remedy any problems identified.
- Action 2.1.5 Continue to enhance stormwater outfalls and sumps across the City to protect both environmentally sensitive areas and public health.
- Action 2.1.9 Continue to maintain existing stormwater infrastructure through the City's Maintenance Program and regular Road Sweeping Program.

Given the significant financial implications of undertaking upgrades to the City's stormwater infrastructure it is important to apply a strategic approach.

#### Participation in Metropolitan Coastal Beaches Microbial Monitoring Program

The City participates in the Metropolitan Coastal Beaches Microbial Monitoring Program run by the Department of Health. Through this program during the summer season a total of 24 samples are taken at regular intervals (every week) from 9 sites along the Joondalup coast (total of 216 samples each summer) to test for microbial activity. Half of these samples are taken by the Department of Health and half by the City's Environmental Health Officers.

This enables the City to take quick and effective action if microbial levels are found to be at a level which could be a risk to human health. To date, even within Hillarys Boat harbour, microbial levels have been found to be below recreational guidelines.

#### Stormwater Upgrades and Infrastructure Improvements

During 2007/08 the City committed funding for the upgrade of stormwater outfalls discharging into Lake Goollelal. This work which is nearing completion was expedited due to the successful application for a Federal Community Water Grant. The grant of \$218,000 was used to bring forward planned works from the 2008/09 Capital Works Program into 2007/08. On completion of the Lake Goollelal stormwater improvements, the City's focus will shift to its coastal outfalls.

Due to the funding grant received in 2006/07 the Council is considering coastal stormwater upgrades in the draft 2008/09 budget. Subject to the budget being approved by Council it is anticipated that the City may start with upgrading two outfalls at Burns Beach (these were identified in the DOW report). These outfalls have already been investigated by the City's consultant to determine what improvements can be taken to improve the quality of the water being discharged. However detailed design will still be required prior to implementing infrastructure improvements.

In addition, as part of the West Coast Drive Shared Path upgrade, the coastal outfalls along this section of the coast (Marmion and Sorrento) will be upgraded on a staged basis. As part of the project the upgrade of the outfalls will need to be prioritised and detailed investigations and designs undertaken.

The City has 20 coastal outfalls (as shown in Attachment 1 and detailed in Attachment 2) and due to this large number and the diversity of works required in implementing practical treatments detailed investigation and preliminary design work

needs to be undertaken to find the best solution for each discharge point. The cost will also be significant and would need to be scheduled and funded over a number of years. For example an average cost of a standard treatment involving installation of gross pollutant traps, drainage basin or underground detention systems etc. can vary from \$50,000 - \$100,000 per treatment. This equates to approximately \$1-2 million in total for all 20 discharge points to be treated that are within the City.

Funding opportunities applicable to the coastal stormwater upgrades will continue to be assessed as they arise as this will enable the City to complete more upgrades in a shorter timeframe.

#### A Case Study - Town of Cottesloe – Groundwater Restoration Program

It is interesting to note that the Town of Cottesloe has entered into a 4 year partnership with the Federal Government to restore groundwater resources. The Project will entail the replacement of open sumps with underground retention systems, 400 new soakage pits which will trap and filter stormwater and replenish groundwater into the aquifer with treated stormwater and will enable 10 stormwater ocean outfalls to be closed along the coast. Another major part of the project is a community education campaign called THINK Water which aims to:

- Reduce private groundwater use;
- Decrease the installation of new private bores;
- Reduce stormwater pollutants;
- Enhance community awareness and encourage positive behaviour change regarding water resources.

The overall cost of these initiatives will be \$600,000 over three years with matching contributions made from the Federal Government and the Town of Cottesloe.

The project provides a good example of a strategic model that has been taken toward water management, protecting groundwater resources and ocean discharges. The City of Joondalup has also taken a strategic approach to water management through its Environment Plan and associated ICLEI Water Campaign. Similar approaches and campaigns will be initiated over the next few years within the City of Joondalup.

Whilst the Town of Cottesloe is showing leadership in managing their water resources it should be noted that the DOW Report made mention of its view toward diverting stormwater into the groundwater; as follows:

*"Diverting stormwater to groundwater, as a means to reduce the impacts of its contaminants on recreational activities and the environment, without controlling and treating the sources of contaminants, is not recommended. Some local governments are currently diverting stormwater this way and others are planning to implement this practice. This is not recommended because we do not know the degree of connection between stormwater, groundwater and near-shore coastal zones, nor what happens to the contaminants as they make their way through these different water bodies".*

It should be noted that given the above the City would put in appropriate engineering treatments i.e. gross pollutant traps, swales etc to ensure any water entering the groundwater is filtered and cleared of contaminants.

**Link to Strategic Plan:**

Key Focus Area	Natural Environment
Objective 2.1	To ensure that the City's natural environmental assets are preserved, rehabilitated and maintained.
Strategy 2.1.4	The City implements improved storm water management and water quality processes.

**Legislation – Statutory Provisions:**

Not Applicable.

**Risk Management considerations:**

Not Applicable.

**Financial/Budget Implications:**

The upgrade of stormwater infrastructure has significant financial implications. In order to upgrade all 20 discharge points along the City's coastline it is necessary to undertake preliminary design to identify what type of treatment is best for each location. The works will vary at each point depending on a range of technical and location specific issues; however as a general estimate each discharge point could likely be upgraded for a cost ranging somewhere between \$50,000 - \$100,000. It is suggested that works would need to be planned and scheduled over a number of years.

It should be noted that Council will consider coastal stormwater upgrades as part of the 2008/09 draft budget. Given the City was successful in obtaining a \$218,000 Community Water Grant in 2007/08 for stormwater upgrades around Lake Goollelal, it is now proposed that budget funding is redirected to upgrading the City's coastal outfalls.

**Policy implications:**

Not Applicable.

**Regional Significance:**

Not Applicable.

**Sustainability implications:**

Upgrades to the coastal stormwater infrastructure will improve the quality of the stormwater and contribute to a healthier ocean environment.

**Consultation:**

Not Applicable.

**COMMENT**

The City is aware of the environmental and health issues associated with stormwater quality and has been and will continue to work actively to improve stormwater infrastructure across the City as part of the Capital Works budget and as key actions within its Environmental Plan and Water Action Plan dictate.

**ATTACHMENTS**

Attachment 1	Map of Outfalls Location within the City of Joondalup
Attachment 2	Details of Coastal Outfalls within the City of Joondalup

**VOTING REQUIREMENTS**

Simple Majority.

**RECOMMENDATION**

**That the Sustainability Advisory Committee NOTES the Report associated with upgrading coastal stormwater outfalls.**

*Appendix 3 refers*



## **APPENDICES FOR AGENDA OF SUSTAINABILITY ADVISORY COMMITTEE**

ITEM	TITLE	APPENDIX	PAGE
Item 2	<b>Opportunities for Solar Power</b>	1	1
Item 3	<b>Energy Efficient Street Lighting</b>  Attachment 1      Replacement of Mercury Vapour Lamps with Energy Efficient lamps as part of the Maintenance Cycle (SAC Meeting 17.4.08).  Attachment 2      South Australian Strategic Action Planning Guide for Sustainable Public Lighting (SAC Meeting 21.02.08)	2	<b>10</b>  <b>16</b>
Item 4	<b>Coastal Stormwater Outfalls</b>	3	<b>19</b>