

DRAFT WORK PLAN

for

Greening of 2010 FIFA World Cup™ Events in Durban

FOR REVIEW

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INTRODUCTION

Durban has been selected as one of nine cities in South Africa to host the 2010 FIFA World Cup™ event. In accepting this role, the eThekweni Municipality has signed a Host City Agreement that includes a commitment to environmental protection:

“CLAUSE 6.7: ENVIRONMENTAL PROTECTION

The Host City undertakes to carry out its obligations and activities under this Agreement in a manner which embraces the concept of sustainable development that complies with applicable environmental legislation and serves to promote the protection of the environment. In particular, the concept of sustainable development shall include concerns for post-competition use of Stadia and other facilities and infrastructure”.

This approach reflects a growing global trend towards “greening” of large sports and other events, the purpose of which is to minimise the associated ecological and social impacts and maximise the economic benefits.

As part of the 2006 FIFA World Cup™ event in Germany, an approach and programme for greening of the event, known as Green Goal™, was developed. The key aim of this programme was to ensure that the event was climate neutral, and included targeted interventions in the following sectors: energy, water, waste and mobility / transport. The inclusion of an Environmental Protection clause in the Host City Agreement for the 2010 FIFA World Cup™ event thus points to the requirement for a similar “greening” approach to be adopted in South Africa for the hosting of the 2010 FIFA World Cup™.

An important principle of Green Goal™ and event greening in general is that of creating a positive environmental legacy. This includes the

implementation of more sustainable and eco-friendly infrastructure or operational systems that continue to provide benefits long after the event has taken place.

The National Department of Environment Affairs and Tourism (DEAT) have been tasked with co-ordinating the greening of the 2010 FIFA World Cup™ event at a national level in South Africa. It is in the process of developing targets (to be complete by early 2008) for the Host Cities in this regard. It is also procuring funding from National Treasury to assist Host Cities with implementing their Greening Programmes at a local level.

In response to the above context, eThekweni Municipality has committed to greening the event in its city through a Greening Workstream that has been established as part of its 2010 event preparations. This Workstream is led by Dr Debra Roberts of the eThekweni Environmental Management Department.

It is the purpose of this Work Plan to establish the principles, approaches and a plan for this Greening Workstream to give effect to it as a **2010 World Cup Greening Programme** in the eThekweni Municipality.

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SECTION A: OVERVIEW OF GREENING PROGRAMME

A1. GREENING PRINCIPLES

There are a number of “green” principles that are being adopted by the eThekweni Municipality in the implementation of infrastructure and operational systems for the 2010 World Cup™ soccer event. The Greening Programme gives a face to these principles and ensures that they are implemented by assisting all sectors to interpret their applicability and translate them into action. These green principles are:

- Minimises ecological, social and economic impacts and costs;
- Maximises ecological, social and economic benefits;
- Minimises wastage of resources;
- Scale and type of installations and systems are appropriate to the South African and Durban context;
- Is financially sustainable;

- Leaves a positive legacy;
- Establishes iconic installations that showcase working examples of green (environmentally friendly) technologies;
- Promotes environmentally sustainable behaviour and awareness.

Owing to the fact that the intention is to achieve a **positive legacy**, all environmental impacts, costs and benefits are evaluated through a Life Cycle approach (i.e. long term and entire value chain considered) when interpreting these principles for specific infrastructure projects and operational systems.

A2. PROGRAMME FOCUS AREAS

eThekweni's 2010 World Cup Greening Programme comprises 5 Focus Areas with associated goals. A key aim of the Programme is **Climate Neutrality**. This implies that action needs to be taken in all Focus Areas where possible to achieve this.

A. Energy

- Minimise consumption of energy
- Maximise use of renewable energy

B. Water

- Minimise consumption of water
- Maximise rainwater capture and grey water recycling
- Minimise pollution of water resources

C. Transport

- Maximise availability, accessibility and efficiency of public transport systems
- Reduce carbon emissions from public transport systems
- Maximise availability and accessibility of non-motorised transport systems

D. Waste

- Maximise the avoidance, reduction and recycling of waste

E. Biodiversity

- Protect and enhance biodiversity and related ecological systems
- Maximise recreational / tourist experiences associated positively with biodiversity

All of these, except the Biodiversity Focus Area, align with those used in the Green Goal™ framework. eThekweni Municipality's Greening Programme has included Biodiversity as a Focus Area as a result of the important role that it plays in providing ecosystem goods and services in Durban¹; and the fact that Durban is home to a unique biodiversity which offers opportunities for tourism and educational experiences which World Cup visitors could enjoy. Internationally, the need to protect and enhance ecological assets as part of event greening is recognised as an important way to ensure that the high intensity of environmental impacts generated during the event period does not degrade these assets, and promotes positive investment into improved ecological functioning and associated increased ecosystem goods and services supply in the long term.

The goals associated with each Focus Area are intended to reflect the green principles that underlie the Greening Programme. These are translated into a range of targets, strategies and interventions further on in this Work Plan.

A3. IMPLEMENTATION OF GREENING PROGRAMME

To achieve implementation of the requisite environmental protection and sustainability principles and goals in the hosting of 2010 World Cup™ events in Durban, **greening interventions will need to be made in a multitude of municipal sectors, private industries, and by NGO's and CBO's.** For example, greening interventions at the Moses Mahbida Stadium will need to be designed and implemented by the Municipal Stadium Project Managers and professional team; and the establishment of an environmentally sustainable waste management system for the stadium and hospitality industry servicing the event will need to be

implemented by the relevant Municipal waste management sector in partnership with private recycling and waste contractor agencies.

The **Greening Programme's key role is to facilitate the integration** of all greening principles, approaches and strategies into the various infrastructural projects and public and private operational systems established for hosting the 2010 FIFA World Cup™ in Durban. The Greening Programme will play an important role in assisting all sectors to find funding for greening projects, link to potential greening partners and access greening technologies and information. The Programme will also gather information on what is achieved and will showcase this as part of eThekweni Municipality's media / communications campaign associated with the event.

The **Greening Programme will be managed** by a Programme Leader (Dr Debra Roberts, employed by the eThekweni Municipality) and a Programme Co-ordinator (at present Nicci Diederichs, sub-contracted to the eThekweni Municipality specifically for this purpose).

A **Greening Work Team** representative of all municipal sectors that have a role to play in implementation of the Greening Programme will be established and will meet regularly. Important non-municipal Greening Programme roleplayers will be invited to participate in specific Greening Work Team meetings that pertain to their area(s) of interest.

All **funds for Greening Programme activities** and projects that cannot be accommodated in the eThekweni Municipality's 2010 Funding Stream will be procured from relevant government departments, private sector partners, or donor funders.

¹ These are worth some R3.2 billion per annum (replacement cost).

A4. SUMMARY OF GREENING PROGRAMME STRATEGIES

In order to achieve action in the 5 Focus Areas of the Programme, this Work Plan sets up Programme-level strategies which include targets and actions that, when implemented by the relevant sectors will achieve the common and overarching greening principles and purpose. These strategies include:

1. Climate Neutral Strategy

- Addresses the aim of achieving a climate neutral event.

2. Energy Strategy

- Addresses components of the Energy Focus Area which are not specific to the Climate Neutrality aim.

3. Water Resources Strategy

- Addresses the Water Focus Area.

4. Waste Strategy

- Addresses the Waste Focus Area.

5. Transport Strategy

- Addresses the Transport Focus Area.

6. Biodiversity Strategy

- Addresses the Biodiversity Focus Area.

7. Capacity Building, Awareness Raising and Marketing Strategy

- Addresses the need for the Greening Programme to raise funds for greening interventions.
- Collects and disseminates information on what is achieved in the Greening Programme.
- Creates capacity for implementation of greening principles, goals and strategies in all sectors.
- Stimulates further greening action for a greater environmental legacy from the event.

8. Monitoring and Evaluation Strategy

- Monitors implementation of Greening Programme.
- Critically evaluates achievements and failures of the Programme, and develops lessons for future event greening approaches in Durban and elsewhere.

A5. PROCESS FOLLOWED IN DEVELOPING THE GREENING PROGRAMME WORK PLAN

This Work Plan has been formulated on the basis of substantive background research into international best practice in events greening, lessons learnt from the 2006 Germany Green Goal™ experience, and a series of workshops held with relevant Durban sector experts in the 5 Programme Focus Areas² to determine appropriate event greening targets and objectives for Durban.

Background work was also conducted in determining the greening approaches and priorities being adopted in other 2010 Host Cities in South Africa, by the national Department of Environment Affairs and Tourism as greening co-ordinator at a national level, and collaboration with KZN Department of Agriculture and Environment Affairs. This has ensured that eThekwin's Greening Programme aligns appropriately with the overall greening of the 2010 World Cup™ event at a national level.

² Energy, Water, Waste, Transport and Biodiversity.

Discussions have also been held with a range of external, and possibly partnering, agencies such as Eskom and DANIDA, who may have a role to play in supporting the Greening Programme – particularly with respect to the positive legacy that it will leave behind.

A baseline Carbon-footprinting exercise was also undertaken to determine the likely carbon emissions that would be generated by the event in Durban. This was done to set appropriate carbon emissions reduction and off-set targets and projects to achieve the aim of hosting a climate neutral event.

It should be noted that, as limited funding is available for greening of the 2010 World Cup at a national level, priority has been given in this Work Plan to greening focus areas and projects for which funding is most likely to be found locally, from national government or from donor agencies. Areas of greening that may have emerged from the Sector Workshops mentioned above and which are not areas of priority for any of the potential funding agencies have thus not been given great attention in this Plan.

SECTION B: GREENING PROGRAMME WORK PLAN

B1. GREENING PROGRAMME STRATEGIES

There are eight strategies making up the Greening Programme Work Plan. Each strategy has a set of targets, actions, timeframes and range of sectors involved in implementation. Each action may be funded by a different agency. The timeframes used are as follows:

Immediate	– Already underway / planned to start within a month
Short Term	– Start before the end of 2007
Medium Term	- Start in 2008
Long Term	- Start in 2009 / implement during the 2010 event
Ongoing	- Continuous until 2010 event
Post-event	- After the 2010 event

B1.1 Climate Neutral Strategy

The Climate Neutral Strategy gives direction to the Greening Programme aim of hosting a climate neutral 2010 World Cup event in Durban.

This strategy has its own actions, but is linked to the Energy, Transport and Waste Strategies, as these all have components that can assist in reducing carbon emissions from the event.

Owing to the fact that carbon emissions management, carbon trading and Clean Development Mechanisms³ (CDMs) are highly specialised fields, the Climate Neutral Strategy will be lead by the Greening Programme Team with contracted specialist input. The various studies required to start implementation of the strategy will require inputs from the Stadium Team, Energy Sector, Transport Sector and Waste Sector. The outcomes of these studies may need to be integrated into the plans, systems and facilities implemented by these sectors. A capacity building programme will be used to extend the knowledge and understanding of climate neutral approaches and systems throughout all municipal sectors, the private sector, NGO and civic organisations.

³ The Clean Development Mechanism (CDM) under the Kyoto Protocol provides an opportunity for projects in developing countries that can reduce greenhouse gas emissions to attract financing and technology investment from industrialised country companies in exchange for carbon credits (Certified Emissions Reductions – CERs). This means that projects that reduce fossil fuel-based electricity and/or energy use, either through energy efficiency interventions or switching to renewable energy, can potentially generate an additional revenue stream by applying to be CDM projects (Econ Analysis, 2006).

TARGETS	ACTIONS	TIMEFRAME	SECTORS INVOLVED	POSSIBLE FUNDING SOURCES
Host a 100% climate neutral 2010 World Cup Event in Durban and leave a positive clean energy legacy in Durban.	1. Determination of baseline carbon footprint of the event in Durban.	Immediate	Contracted specialists	In-house (already allocated)
	2. Determination of carbon-emissions reductions from planned energy saving and green energy interventions at the stadium, in the transport sector and in waste management systems.	Short Term	Contracted specialists Stadium Team – inputs Metro Electricity – inputs ETA - inputs DSW - inputs	DANIDA World Bank Eskom
	3. Pre-feasibility study for Clean Development Mechanism (CDM) of stadium and practice stadia that generates green energy for these facilities; as well as biogas / landfill gas / solar heating for housing projects that offset remaining carbon emissions from event and creates a positive legacy for Durban. Also to evaluate the possible use of existing green energy resources from Bisasar Rd Landfill Gas project for the event.	Short Term	Contracted specialists Stadium Team – inputs Metro Electricity – inputs ETA - inputs DSW – inputs Eskom	DANIDA World Bank UNDP Eskom
	4. Implementation of CDM if feasible.	Medium Term	Stadium Team DSW Metro Electricity Contracted specialists Eskom	World Bank DBSA Eskom
	5. Review all aspects of energy procurement for stadium and stadium precinct to determine if other sources of green energy can be purchased or supplied.	Short Term	Stadium Team Metro Electricity Eskom	Part of stadium cost. eThekweni Municipality DEAT / National Treasury

B1.2 Energy Strategy

The Energy Strategy provides targets and actions for the Energy Focus Area of the Greening Programme. It aims for action in the way that the eThekweni Municipality services infrastructure and facilities for the 2010 World Cup – and beyond; as well as develops guidelines that can be used to promote greater energy efficiency in the private sector.

TARGETS	ACTIONS	TIMEFRAME	SECTORS INVOLVED	POSSIBLE FUNDING SOURCES
A. Maximise & demonstrate energy use reductions: i. Energy efficiency measures implemented throughout stadium. ii. Solar powered street & walkway lighting in stadium precinct. iii. Promote energy reductions in broadcasting, hospitality	1. Internal review of stadium and precinct design and installations to maximise energy efficiency. Investigate options of iconic solar energy usage at Viewers Centre on top of the stadium arch or elsewhere. Include feasible installations in stadium during construction.	Immediate	Stadium Team	Part of stadium cost.
	2. DEAT Review of Stadium and practice stadia to determine any energy efficiency opportunities missed.	Short Term	DEAT – review already planned Stadium Team - inputs Practice Stadia Workstream – inputs Strategic Projects Unit - inputs	DEAT / DANIDA

& catering service sectors & municipal and private sector buildings / facilities.	3. Investigate solar powered street / walkway lights for stadium precinct, beachfront and fan fest areas. Install these where possible.	Short Term	Metro Electricity	Metro Electricity in-house design cost
	4. Develop Energy Efficiency Guidelines for all municipal infrastructure and installations for 2010 – which can also be implemented by private sector.	Short Term	Architectural Services Metro Electricity Eskom Specialists Imagine Durban 2100	UNDP DANIDA GEF Eskom KZN DAEA CIDA
	5. Lobby National Tourism Grading Council to use energy efficiency criteria (as per Energy Efficiency Guidelines developed) for grading hospitality industry that will service 2010 events.	Short Term	DEAT Durban Africa TKZN	N/A
	6. Investigate and determine energy pricing strategy for broadcasters and service industries using the stadium during the event to incentivise minimised use.	Medium Term	Strategic Projects Unit Metro Electricity eThekweni Treasury	N/A
	7. Advocate / promote implementation of Energy Efficiency Guidelines in all municipal and private developments associated with 2010, and integrate into Municipal Procurement Policy if possible.	Medium Term	Enviro Management Dept Metro Electricity Architectural Services Strategic Projects Unit	N/A
B. Showcase use of renewable energy through iconic solar water heating installation at stadium retail area.	1. Investigate and design iconic solar water heating installations at stadium retail areas. Install these during construction.	Immediate	Stadium Team	Part of stadium cost. KZN DAEA

B1.3 Water Resources Strategy

The Water Resources Strategy provides targets and actions for the Water Focus Area of the Greening Programme. The Strategy aims to improve the water use efficiency of municipal facilities established for the 2010 World Cup, protect local and coastal water resources and aquatic ecosystems around the stadium precinct. It also aims to establish a long term legacy in the development and integration of water use efficiency guidelines for all municipal facilities, as well as raise awareness and stimulate action in the private sector.

TARGETS	ACTIONS	TIMEFRAME	SECTORS INVOLVED	POSSIBLE FUNDING SOURCES
A. Reduce water use: i. Water wise landscaping, planting plan to minimise irrigation requirements. ii. Maximise reductions through procurement of water-saving fittings / systems. iii. Maximise action in hospitality sector.	1. Internal review of stadium and precinct design and installations to maximise water use efficiency, identify grey water recycling project, design stormwater filtration system and ensure flood peaks are attenuated. Include feasible designs and projects and specify fittings for stadium during construction.	Immediate	Stadium Team	Part of stadium cost
	2. Internal review of practice stadia to determine opportunities for rainwater harvesting, grey water recycling. Implement any possible measures during construction / refurbishment.	Immediate	Practice Stadia Workstream Strategic Projects Unit Architectural Services	DEAT UNDP KZN DAEA
	3. DEAT Review of Stadium and practice stadia to determine any water efficiency, rainwater capture and grey water recycling opportunities missed.	Short Term	DEAT – review already planned Stadium Team - inputs Practice Stadia Workstream – inputs Strategic Projects Unit - inputs	DEAT / DANIDA
B. No increased flood peaks as a result of hard surfacing in the stadium precinct.				
C. Maximise & showcase water / wastewater capture & recycling: i. Install iconic grey water capture & re-use system at the stadium. ii. Capture stadium roof water & store / use for landscape irrigation.	4. Develop Water Efficiency Guidelines for all municipal infrastructure and installations (including landscaping) for 2010 – which can also be implemented by private sector.	Short Term	Architectural Services, Metro Water Services and specialists Imagine Durban 2100	UNDP DANIDA GEF Eskom KZN DAEA
	5. Lobby National Tourism Grading Council to use water efficiency criteria (as per Water Efficiency Guidelines developed) for grading hospitality industry that will service 2010 events.	Short Term	DEAT and Durban Africa	N/A
	6. Advocate / promote implementation of Water Efficiency Guidelines in all municipal and private developments associated with 2010, and integrate into Municipal Procurement Policy if possible.	Medium Term	Enviro Management Dept Architectural Services Metro Water Services Strategic Projects Unit	N/A
D. Prevent water resources & coastal pollution: Include functional system of stormwater filtration from the stadium precinct.				

A1.4 Waste Strategy

The Waste Strategy provides targets and actions for the Waste Focus Area of the Greening Programme. The strategy aims to develop a waste management system which includes establishment, upgrading and expansion of facilities and resources for waste separation and recycling that can service the 2010 World Cup and beyond. It also aims to develop an approach to waste minimisation at events through the development of appropriate product packaging specifications for all catering concessions / service providers, and aims to minimise waste generated by construction / refurbishment activities. The private sector will be encouraged or incentivised to participate in achieving reductions in waste outputs and undertaking waste separation and recycling.

The management of waste is mainly an operational issue, with limited need to install expensive new infrastructure or facilities. It therefore represents an important opportunity to create new mindsets around sustainable waste management that will have benefits far beyond the 2010 World Cup.

TARGETS	ACTIONS	TIMEFRAME	SECTORS INVOLVED	POSSIBLE FUNDING SOURCES
A. Establish a waste management system that includes waste separation & organised recycling streams – to service 2010 and beyond.	1. Develop a sustainable waste management system for servicing the 2010 event and beyond. To include waste separation facilities, recycling waste streams, waste composting and waste minimisation at source (including product packaging specifications for all catering concessions and service providers). Volunteers for 2010 and NGOs to be included where possible. Job creation in waste separation and recycling businesses to be targeted.	Short Term	DSW Imagine Durban 2100 Stadium Team Parks Dept Events Manager IZWA Recycling agencies	UNDP CIDA DANIDA Recycling agencies Coca-Cola
B. Minimise waste at source at all 2010 events.	2. Implement waste management system through installation of appropriate facilities and systems at stadia and / or at existing municipal waste management facilities.	Medium Term	DSW Stadium Team Recycling agencies Parks Dept IZWA Recycling agencies	DBSA DANIDA Stadia budgets
C. Create sustainable jobs through waste management system.	3. DEAT Review of Stadium and practice stadia to determine any additional sustainable waste management opportunities.	Short Term	DEAT – review already planned Stadium Team - inputs Practice Stadia Workstream – inputs Strategic Projects Unit - inputs	DEAT / DANIDA
D. Minimise waste & maximise recycling during all municipal infrastructure development and refurbishment.	4. Develop Waste Management Guidelines for all municipal infrastructure and installations for 2010 and beyond – which can also be implemented by private sector. To include principles of waste separation, recycling and waste minimisation. To address waste management during demolition, construction and refurbishment, as well as operation of facilities.	Short Term	Architectural Services DSW Imagine Durban 2100 Specialists	UNDP CIDA DANIDA

	5. Include Waste Management Guidelines in all demolition and construction tenders and contract documents. Monitor implementation.	Short Term	Strategic Projects Unit All 2010 Workstreams Municipal Procurement / Contracts Dept	N/A
E. Increase sustainable waste management in private sector during 2010 and beyond.	1. Advocate / promote implementation of Waste Management Guidelines in private developments and service agencies associated with 2010, and integrate into Municipal Procurement Policies for hospitality and catering sectors if possible.	Medium Term	Enviro Management Dept Architectural Services DSW Strategic Projects Unit Municipal Procurement / Contracts Dept	N/A
	2. Lobby National Tourism Grading Council to use waste management criteria (as per Waste Management Guidelines developed) for grading hospitality industry that will service 2010 events.	Short Term	DEAT Durban Africa	N/A

B1.5 Transport Strategy

The Transport Strategy addresses targets and actions for the Transport Focus Area of the Greening Programme. The strategy aims to achieve an improved system and quality of public transport to service the 2010 event, to accommodate the maximum possible numbers of event participants. This will address the need for reduced carbon emissions from individual vehicle transport to events, and will ease existing problems of traffic congestion and inadequate parking space around the stadium during events. This strategy looks to establishing a positive public transport and non-motorised transport legacy in Durban through the upgrading of public transport facilities and systems, and the establishment of a safe network of cycle and pedestrian routes.

TARGETS	ACTIONS	TIMEFRAME	SECTORS INVOLVED	POSSIBLE FUNDING SOURCES
A. Increase quality, accessibility & maximise levels of use of public transport for 2010 & beyond. B. Minimise traffic congestion & parking requirements at all event venues for 2010 & beyond.	1. Plan and implement Park & Ride facilities for all events and to service maximum numbers possible as planned.	Immediate	Strategic Projects Unit ETA Real Estate Dept	2010 Funding Stream
	2. Assist / support SARCC-Metrorail in upgrading of rail stations and transport capacity where applicable / possible.	Immediate	Strategic Projects Unit ETA Development Planning	SARCC
	3. Implement public transport lanes along M4, Western Freeway, CBD / Inner City as planned.	Immediate	ETA, Roads Dept	Already sourced
	4. Investigate implementation of match ticketing that includes discounted transport to the event by bus, taxi or train. To incentivise use of public transport systems.	Long Term	Strategic Projects Unit ETA Event Organisers	N/A
	4. Plan and resource municipal public transport fleet for improved capacity and quality of road transport. Ensure all linkages between key transport hubs, event venues and tourist attractions are made.	Medium Term	Strategic Projects Unit ETA eThekweni Roads Dept	National Dept of Transport KZN DOT

	5. Engage Taxi's for establishing operating protocols in and around stadium precinct for reduced traffic congestion.	Medium Term Long Term	Strategic Projects Unit ETA Taxi Associations	eThekwini Municipality
C. Increase non-motorised transport networks & safety (pedestrian & cycle routes).	1. Design safe pedestrian and cycle networks around (and linking where appropriate) the stadium precinct, beachfront, fan fest areas, Umgeni River Mouth, practice stadia.	Short Term	Stadium Precinct Team Strategic Projects Unit ETA	Part of stadium cost eThekwini Municipality KZN DAEA GEF UNDP
	2. Include safe bicycle and motorbike parking facilities at stadia, fan fest areas and at key stopping / tourist points on cycle routes.	Long Term	Economic Development Strategic Projects Unit	Part of event cost PPP with small business
	3. Promote / assist bicycle hire businesses along beachfront / at stadium precinct.	Long Term	Economic Development	N/A
D. Showcase & promote carbon-emissions reducing technologies in public transport vehicles if possible.	1. Investigate and if possible implement iconic hybrid / gas powered / electric vehicles for servicing the 2010 event (and beyond). May require a national directive for local implementation for 2010; or may involve local partnership with vehicle manufacturer for longer-term use of public transport vehicles using these technologies in Durban.	Medium Term	DEAT ETA Strategic Projects Unit	FIFA Sponsor - Hyundai Toyota Mercedes Renault DEAT / GEF
	2. Investigate promotion / incentivisation use of gas powered / hybrid / electric vehicles in privately owned public transport fleets. Needs national directive.	Medium Term	DEAT ETA	N/A

B1.6 Biodiversity Strategy

The Biodiversity Strategy provides targets and actions for the Biodiversity Focus Area of eThekwini's 2010 World Cup Greening Programme. The aim of this strategy is to ensure that local biodiversity is promoted and enhanced through the hosting of the 2010 World Cup in Durban. The strategy includes the development of landscaping approaches and guidelines for municipal and private developments that can be used for 2010 and after. It also includes the establishment of a "Green" Precinct around the Umgeni Estuary, which abuts the 2010 Stadium Precinct, and which offers a range of high quality biodiversity and eco-tourism experiences and facilities that can be enjoyed during 2010 and afterwards linked to ICC conferencing packages and Durban's Beach Events / Festivals.

TARGETS	ACTIONS	TIMEFRAME	SECTORS INVOLVED	POSSIBLE FUNDING SOURCES
A. Achieve 100% locally indigenous landscaping in the Stadium Precinct & all municipal facilities / tourist routes established for 2010 & beyond.	1. Develop a landscaping concept for the People's Park adjacent the Stadium that creates an iconic local biodiversity experience. The concept may be put out as a concept competition.	Short Term	Parks Dept Stadium Team	Part of stadium cost SANBI DEAT
	2. Develop Indigenous Landscaping Guidelines for all municipal facilities and infrastructure (including Corridors of Excellence, tourist routes, stadium precinct) established for 2010. To include protocol for local plant production, plant acquisition and typologies of planting.	Short Term	Beautification Workstream Parks Dept Enviro Management Dept WESSA EKZNW Specialists	eThekwini Municipality WWF SANBI DEAT KZN DAEA EKZNW

B. Promote indigenous landscaping for all private sector developments established for 2010 or in 2010 activity areas, and into the future.	1. Advocate / promote implementation of Indigenous Landscaping Guidelines in private developments associated with 2010 and into the future.	Medium Term Long Term	Development Planning Parks Dept Enviro Management Dept KZN DAEA EKZNW	N/A
C. Establish a Biodiversity or Green Precinct in the Umgeni Estuary Area which adds value to the tourism & recreational offering of the 2010 Stadium Precinct & the ICC.	1. Undertake feasibility study for development of a canopy boardwalk and associated educational and guide facilities at Burman Bush.	Short Term	Enviro Management Dept Parks Dept Specialists	eThekwini Municipality
	2. If feasible, seek funding, pursue legal authorisations and implement canopy boardwalk and associated facilities at Burman Bush, with increased safety and security measures in place.	Medium Term	Enviro Management Dept Parks Dept WESSA EKZNW Specialists Volunteer Workstream Birdlife SA / International	SAPPI WESSA EKZNW DANIDA eThekwini Municipality
	3. Undertake feasibility study for development of a Biodiversity / Green Resource Centre of Hub at the Umgeni Estuary. Site is municipal-owned land adjacent M4 bridge. To possibly include birding, hiking and trails info centre for Green Precinct and municipality as a whole; Guide pick-up point; Environmental Education and Conferencing Centre; Restaurant & crafts / indigenous plants complex. To use Green Building Technologies in construction and operation.	Short Term	Strategic Projects Unit Architectural Services Development Planning Enviro Management Dept Economic Development Commercial Partners WESSA EKZNW Real Estate Dept	UNDP DEAT KZN DAEA DANIDA WESSA eThekwini Municipality EKZNW WWF DBSA
	4. If feasible, procure funding and develop Biodiversity / Green Resource Centre Hub at Umgeni Estuary.	Medium Term	Strategic Projects Unit Architectural Services Real Estate Dept Commercial Partners	Commercial partners eThekwini Municipality DBSA
	5. Assist Umgeni River Conservancy and local businesses to "green" the Umgeni Estuary Precinct by alien plant clearing, wetland rehabilitation, trails development and maintenance, improving pedestrian and bicycle safety on local roads, improving safety and security. Assist in lobbying for funding for this and other alien plant clearing initiatives in Biodiversity / Green Precinct.	Short Term	Parks Dept Enviro Management Dept GDCF	DEAT Poverty Alleviation Fund Working for Wetlands Working for Water KZN DAEA

B1.7 Capacity Building, Awareness Raising & Marketing Strategy

The Greening Programme introduces a range of new eco-friendly approaches and technologies to the 2010 event infrastructure and operational systems that have not commonly been seen or used before. In order to create a positive environmental legacy and stimulate wider action in the implementation of these approaches and technologies, awareness of their uses and benefits needs to be created. This will be done through an environmental awareness-raising campaign linked to the 2010 Communications Workstream.

The interventions proposed in the Greening Programme all come with a cost. Doing things in a more environmentally friendly way often means that the initial capital costs of setting up a system or constructing a facility are higher – although the savings in the operation of the system or facility using the eco-friendly technology may make up for this over time. To be feasible, the Greening Programme interventions presented in this Work Plan thus need to be funded, and the eThekweni Municipality may not always be in a position to do this in-house, or with the budget allocated by National Treasury for hosting the 2010 FIFA World Cup™. As Durban is committed to a sincere effort at Greening the 2010 World Cup event, it will make a concerted effort to seek funding for greening interventions from a range of sources. This requires a marketing strategy.

In order to market the Greening Programme and raise awareness of the interventions and benefits it involves, the Programme needs to be branded.

TARGETS	ACTIONS	TIMEFRAME	SECTORS INVOLVED	POSSIBLE FUNDING SOURCES
A. Raise awareness of eco-friendly technologies, systems & approaches before and through the 2010 World Cup. B. Build capacity in all sectors for improved short and long term implementation of greening programme principles and goals.	1. Develop a brand for the Greening Programme under / within the Durban 2010 World Cup branding and logo.	Short Term	Communications Workstream	eThekweni Municipality 2010 Funding Stream
	2. Collect and collate information on what is achieved in the Greening Programme throughout the build up to and hosting of the event.	Immediate and Ongoing	Inputs from all sectors	N/A
	3. Establish and maintain a Greening Programme information centre within the Durban 2010 World Cup website and SA 2010 World Cup website.	Short Term	Communications Workstream	N/A
	4. Establish information displays for all iconic greening interventions made at stadia, fan fest areas, and within tourist routes / corridors of excellence, transport hubs.	Long Term	Communications Workstream Event Managers Specialists	eThekweni Municipality 2010 Funding Stream
	5. Maintain positive presence in local and national press through regular submission of articles on what is being done / achieved.	Immediate and Ongoing	Greening Programme	N/A
	6. Undertake capacity building, promotions and awareness programmes for all aspects of the greening programme, for government, private, NGO and civics sectors, as well as the general public.	Long Term	Skills Development Unit Communications Strategic Projects Unit	eThekweni Municipality DEAT / National Treasury
C. Procure additional project funding for greening interventions.	1. Identify and canvass potential funders to determine their areas of priority for funding, funding criteria and timeframes of funding.	Short Term	Greening Programme	N/A
	2. Prepare project proposals and submit to appropriate funders for approval.	Ongoing	Greening Programme	N/A

B1.8 Monitoring & Evaluation Strategy

Owing to the fact that event greening is an emerging field internationally, the eThekweni 2010 World Cup Greening Programme offers an important opportunity to critically evaluate and learn from the experience. In order to do this, implementation of the Greening Programme Work Plan must be monitored through its implementation. Information from this monitoring needs to be critically evaluated to determine the factors of success and failure during each phase of implementation - from event planning to hosting of the event, and for a period following to determine the legacy effects of the Programme. Owing to the fact that the Awareness Raising Strategy requires regular monitoring of the achievements of the programme for the purposes of reporting, this action is not repeated specifically in the Monitoring and Evaluation Strategy.

The outputs of the Programme Evaluation can be used by the eThekweni Municipality to develop greening approaches to other events hosted in Durban, and can be shared with other South African cities, FIFA and the international community.

TARGETS	ACTIONS	TIMEFRAME	SECTORS INVOLVED	POSSIBLE FUNDING SOURCES
A. Monitor implementation of the Greening Programme.	1. As per Action A2 of the Awareness Raising & Marketing Strategy: Collect and collate information on what is achieved in the Greening Programme throughout the build up to and hosting of the event. Include monitoring of performance and operation of infrastructure and systems with a legacy focus for at least 1 year following the event.	Immediate and Ongoing	Greening Programme	N/A
B. Critically evaluate the successes and failures of the Greening Programme and make assessment information available to others.	1. Analyse factors of success and failure in the planning, hosting and post-event stages of the 2010 World Cup. Publish results to an appropriate level of public access.	Post-Event	Greening Programme Specialists	DEAT

B2. SECTORS INVOLVED IN IMPLEMENTATION

There are a number of Sectors mentioned in the Greening Strategies that have a role to play in implementation.

B2.1 Stadium Team

The Stadium Team comprises the Professional Consortium appointed to design and build the Moses Mahbida Stadium at Kings Park, and to plan the surrounding stadium precinct. Included in this team are the municipal project managers (Strategic Projects Unit) that also lead and co-ordinate the Durban 2010 World Cup event planning and hosting.

The Stadium Team has an important role to play in investigating, designing and implementing appropriate greening technologies at the stadium and in the stadium precinct. It also has a role to play in evaluating and reporting-back on its achievements and compliance with the Greening Programme principles and approaches.

B2.2 eThekweni Municipality

There are a large number and range of **municipal departments** that will play a role in the planning, design and servicing of the 2010 World

Cup events in Durban. Many of these departments are represented in the various 2010 Workstreams that have been set up and are specifically involved in actions related to the 2010 World Cup events in Durban. There are also many others that have a role to play in the implementation of the Greening Programme through their day-to-day development planning and control, transport systems planning and development, environmental management, waste management, contracts and procurement management, plant production and landscape management functions.

It is all of these departments that are called on in this Greening Programme to implement or assist with greening actions and communications specific to the 2010 World Cup events, and / or to implement the Energy Efficiency, Water Efficiency, Waste Management and Indigenous Landscaping Guidelines developed by the Greening Programme in a broader arena and in the longer term.

Imagine Durban 2100 is an eThekweni Municipality led, community driven project that aims to unlock the imagination of the people, take an integrated, long-term look at the city, agree on where we want to be (in 100 years or less) and create a path to take us there. The 2010 Greening Programme has clear links to this initiative, as it presents an opportunity to test and establish technologies and systems that could contribute to a more sustainable future for Durban by 2100. The need for close collaboration between the Greening Programme and the Imagine Durban team is clear, as this will assist in securing the green legacy of the 2010 Greening Programme.

The **Greater Durban Community Foundation (GDCF)** was originally appointed by the eThekweni Municipality to develop Public Private Partnerships (PPPs) with community based organizations for the purposes of economic development, environmental protection,

sustainable development etc. The GDCF is currently playing an active role in facilitating the development of a co-ordinating institution and plan for uplifting the Umgeni Estuary area. They thus are important partners in the implementation of the Greening Programme Biodiversity Strategy for the establishment of the proposed “Green Precinct” at the Umgeni Estuary.

B2.3 National Government & Agencies

The **Department of Environment Affairs and Tourism (DEAT)** has been elected as the national co-ordinator of the greening of the 2010 FIFA World Cup™ and is thus the key national department with a role to play in eThekweni’s Greening Programme. Although its full suite of activities in respect of this role has not yet been clarified, DEAT will be expected to take leadership in all interventions that require a national-scale directive. For example,

- the procurement of carbon-emissions reducing public transport vehicles,
- a national branding of the greening of the 2010 FIFA World Cup™ (similar to Green Goal™),
- assisting host cities to set realistic greening targets,
- procurement of funding and expertise to assist host cities in achieving their greening targets,
- establishing a national hospitality and tourism framework that sets criteria and standards for greening of tourism service sectors; etc.

DEAT has close links with the UNDP, GEF and DANIDA, which would put it in a strong position to assist with procuring project finance for greening initiatives associated with 2010. DEAT also administers the **National Poverty Alleviation Fund** and **Working for Wetlands Programme**, both of which may be approached for project funding associated with the 2010 World Cup (specifically in the areas of job creation associated with environmental and waste management and

estuarine / wetland rehabilitation associated with the proposed “Green Precinct” around the Umgeni Estuary).

The **Tourism Grading Council of South Africa (TGCSA)** was established by the Minister of Environment Affairs and Tourism to provide a framework and process for grading across all relevant sectors of the tourism industry in South Africa. The TGCSA performs an important role in ensuring that a high quality standard is achieved across all the services and facilities offered by the South African tourism industry. At present the TGCSA does not include “green” criteria or standards in their grading system. It is therefore proposed in the Greening Programme that the TGCSA be approached to include green criteria and standards in their tourism grading system that align to the greening principles and targets of Durban and South Africa. This will require assistance from DEAT, but if achieved will have a substantial legacy impact throughout the country.

B2.4 Provincial Government

The **KZN Department of Agriculture and Environment Affairs (KZN DAEA)** has been tasked by DEAT to assist and support 2010 World Cup host cities in the province. This role can include assistance with procurement of greening project funding, assistance with technical expertise and advice on legal frameworks under their jurisdiction etc.

The **KZN Tourism Authority (TKZN)** can play a role by promoting environmentally responsible tourism, and in particular promoting the observance of the Greening Principles that form part of the eThekweni Greening Programme in KZN.

B2.5 Private Sector

For the purposes of implementation of the Greening Programme, the private sector includes:

- National Energy Supplier - Eskom
- Private developers that will service and benefit from 2010
- Hospitality industry
- Catering industry
- Tourism / leisure industry
- Public transport industry (private taxi's and buses)
- Private business that wishes to partner, fund or participate in greening interventions⁴
- Recycling agencies

Eskom is a private company that is wholly owned by the South African government. It is the national supplier of electricity to South Africa. Eskom has a number of initiatives underway to manage electricity demand in the face of a current bulk energy supply crisis. In addition, Eskom has been undertaking research into renewable energy systems. Eskom may thus contribute knowledge and capital to assist in the Energy Strategy of the Greening Programme. Their support will be sought through DEAT, who is liaising with them regarding national-scale interventions for the greening of the 2010 FIFA World Cup™.

Many Durban-based **hospitality, catering and tourism / leisure businesses** stand to benefit substantially from the hosting of the 2010 World Cup in Durban. However, unless these businesses are direct suppliers to the 2010 event under the control of the event organisers,

⁴ Important here are the FIFA official sponsors of the 2010 World Cup™. Coca-cola is currently supporting a WWF fresh water conservation initiative in the USA; McDonalds have a sustainable waste management strategy that they implement in some countries that could be drawn on for SA; Budweiser supports a range of conservation and stewardship programmes internationally.

there is limited means to force them to assist in achieving the city's greening targets.

The Federated Hospitality Association of Southern Africa (FEDHASA) represents the hospitality sector in South Africa. It is a key point of contact for any intervention that involves the promotion of greener tourism for 2010 and beyond.

Recycling agencies such as Mondi, Reclam and Collect-a-Can will have an important role to play in the Waste Strategy, as it is likely that their services will be used in the sustainable waste management system established for the event and beyond.

Private developers may be encouraged to participate in the greening approach by adopting the various greening guidelines developed through the Greening Programme.

B2.6 Parastatals, NGO's & CBO's

There are a number of parastatals, NGO's and CBO's that can contribute to the targets and actions of the Greening Programme. These include:

Ezemvelo KZN Wildlife - KZN mandated custodians of biodiversity, and can assist in planning and designing interventions in the Biodiversity Strategy, as well as tourism greening approaches.

WESSA – The Wildlife and Environment Society of Southern Africa is an NGO lobby group focusing on environmental protection. It includes an environmental education arm that could assist with the design and development of educational and awareness materials as part of the Greening Programme. WESSA is a potential partner in the establishment of an environmental education centre at the Green Resources Hub proposed as part of the Biodiversity Strategy.

Umgeni River Conservancy – A community-based organisation that plays an active role in the management of the lower reaches of the Umgeni River, including the estuary. This group has an important role to play in the implementation of the proposed "Green Precinct" around the Umgeni Estuary as part of the Biodiversity Strategy.

IZWA – The Institute for Zero Waste is a NGO promoting sustainable waste management in South Africa. IZWA can be co-opted to assist in designing a sustainable waste management system for Durban to service 2010, and may be able to assist in providing volunteers and trained people to create awareness around waste separation and recycling during the 2010 World Cup event, and assist with development of educational displays on waste management.

B3. GREENING WORK TEAM

A Greening Work Team will be established with representatives from all relevant municipal departments. The Greening Work Team will meet as a whole to start with, and from there be divided logically into Task Groups focusing on specific Greening Strategies. Each task group will

meet regularly (timeframes to be decided by each task Group) to discuss direction and progress with implementation of its mandated strategies. The Greening Programme Team will co-ordinate and facilitate these meetings, and use them to track progress and unblock problems as they arise.

Representatives from municipal departments with a minor role to play in implementing the Greening Strategies will be invited to attend specific Task Group meetings when relevant. Roleplayers from outside the municipality will also be invited to attend specific Task Group meetings as necessary to input / report back on activities that they are involved with.

The proposed structure of the Greening Work Team and Task Groups is based on inputs obtained at the 5 Sector Workshops held in the preparation of this Work Plan:

Work Team Leader: Debra Roberts (2010 Greening Workstream Leader)

Work Team Co-ordinator: 2010 Greening Workstream Co-ordinator

Core Work Team Member: Sue Bannister (Strategic Projects Unit)

Municipal Departments Represented on Task Teams:

- Stadium team representatives (called on as required)
- Practice Stadium Workstream
- City Beautification Workstream
- Durban Africa / Tourism Workstream
- Metro Electricity
- Metro Water Services
- Durban Solid Waste
- Architectural Services
- Traffic & Transportation
- Environmental Management Dept
- Parks, Leisure & Cemeteries Unit

- Catchment & Coastal Management Unit
- Communications
- Skills Development Workstream
- Imagine Durban 2100 team members

Additional Municipal Departments / Projects with Minor Roles:

- Real Estate
- Treasury
- Roads
- Events Management Workstream
- Volunteers Workstream
- Economic Development Unit / Workstream
- Contracts Department
- Materials Management Department
- Development Planning Unit

Non-Municipal Roleplayers:

- Greater Durban Community Foundation
- WESSA
- EKZNW
- IZWA
- Eskom
- KZN DAEA
- Recycling Companies
- Durban Chamber of Commerce
- Specialists

B4. SUMMARY OF MUNICIPAL SECTOR ROLES IN GREENING STRATEGY IMPLEMENTATION

The following table presents a summary of the Greening Programme strategies, targets and actions that different municipal and related sectors have a role in the implementation of:

Sector	Sector Actions	Timeframe	Greening Strategy
Stadium Team	Internal review of stadium and precinct design and fittings to: maximise energy efficiency, iconic solar water heating installation, maximise water efficiency, identify grey water recycling project, design stormwater filtration system and ensure flood peaks are attenuated. Include feasible installations in stadium during construction.	Immediate	Energy Water Resources
	Inputs to DEAT specialist review of stadium.	Short Term	Energy Water Resources
	Input into the determination of carbon emissions savings created by energy efficiency, renewable energy, waste management & transport system installations at the stadium & in stadium precinct.	Short Term	Climate Neutral
	Inputs into CDM pre-feasibility study for the stadium.	Short Term	Climate Neutral
	Input into the development of a sustainable waste management system for Durban for 2010 and beyond. Implement appropriate facilities at the stadium in response to waste management system selected.	Short Term	Waste
	Input into the development of a sustainable waste management system for servicing the 2010 event and beyond. To include waste separation facilities, recycling waste streams, waste composting and waste minimisation at source (including product packaging specifications for all catering concessions and service providers). Volunteers for 2010 and NGOs to be included where possible. Job creation in waste separation and recycling businesses to be targeted.	Short Term	Waste
	Input into design of safe pedestrian and cycle networks around (and linking where appropriate) the stadium precinct, beachfront, fan fest areas, Umgeni River Mouth, practice stadia.	Short Term	Transport
	Develop a landscaping concept for the People's Park adjacent the Stadium that creates an iconic local biodiversity experience. The concept may be put out as a concept competition.	Short Term	Biodiversity
	Implement waste management system through installation of appropriate facilities and systems at stadia and / or at existing municipal waste management facilities.	Medium Term	Waste
	Implementation of appropriate CDM / carbon emissions reducing technologies.	Medium Term	Climate Neutral
Architectural Services	Internal review of practice stadia to determine opportunities for rainwater harvesting, grey water recycling. Implement any possible measures during construction / refurbishment.	Immediate	Water Resources
	Input into the development of Energy Efficiency Guidelines, Water Efficiency Guidelines and Waste Management Guidelines for all municipal infrastructure and installations for 2010 – which can also be implemented by private sector.	Short Term	Energy Water Resources Waste
	Input into feasibility study for development of a Biodiversity / Green Resource Centre of Hub at the Umgeni Estuary. Site is municipal-owned land adjacent M4 bridge. To possibly include birding, hiking and trails info centre for Green Precinct and municipality as a whole; Guide pick-up point; Environmental Education and Conferencing Centre; Restaurant & crafts / indigenous plants complex. To use Green Building Technologies in construction and operation.	Short Term	Biodiversity
	If feasible, assist in procuring funding and developing Biodiversity / Green Resource Centre Hub at Umgeni Estuary.	Medium Term	Biodiversity
	Advocate / promote implementation of the Energy Efficiency Guidelines, Water Efficiency Guidelines, Landscaping Guidelines and Waste Management Guidelines in all municipal and private developments associated with 2010.	Medium Term	Energy Water Resources Waste Biodiversity

Beautification Workstream	Develop Indigenous Landscaping Guidelines for all municipal facilities and infrastructure (including Corridors of Excellence, tourist routes, stadium precinct) established for 2010. To include protocol for acquisition and typologies of planting.	Short Term	Biodiversity
Communications Dept	Develop a brand for the Greening programme under the Durban 2010 branding & logo.	Short Term	Capacity, Awareness & Marketing
	Establish and maintain a Greening programme information centre within the Durban 2010 website.	Short Term	Capacity, Awareness & Marketing
	Establish information displays for all iconic greening interventions at stadia, fan fest areas, in tourist routes & corridors.	Long Term	Capacity, Awareness & Marketing
	Undertake capacity building, awareness raising and promotions campaign (possible including schools competitions etc) for greening programme, principles and goals.	Long Term	Capacity, Awareness & Marketing
Contracts Dept	Include Waste Management Guidelines in all demolition and construction tenders and contract documents. Monitor implementation.	Short Term	Waste
	Integrate Waste Management Guidelines into Municipal Procurement Policy for hospitality and catering sectors.	Medium Term	Waste
Development Planning	Assist / support SARCC-Metrorail in upgrading of rail stations and transport capacity where applicable / possible.	Immediate	Transport
	Input into feasibility study for development of a Biodiversity / Green Resource Centre of Hub at the Umgeni Estuary. Site is municipal-owned land adjacent M4 bridge. To possibly include birding, hiking and trails info centre for Green Precinct and municipality as a whole; Guide pick-up point; Environmental Education and Conferencing Centre; Restaurant & crafts / indigenous plants complex. To use Green Building Technologies in construction and operation.	Short Term	Biodiversity
	Advocate / promote implementation of the Energy Efficiency Guidelines, Water Efficiency Guidelines, landscaping Guidelines and Waste Management Guidelines in all municipal and private developments associated with 2010.	Medium Term	Energy Water Resources Waste Biodiversity
Durban Solid Waste	Input into the determination of carbon emissions savings created by waste management installations at the stadium & in stadium precinct.	Short Term	Climate Neutral
	Inputs into CDM pre-feasibility study for the stadium.	Short Term	Climate Neutral
	Develop a sustainable waste management system for servicing the 2010 event and beyond. To include waste separation facilities, recycling waste streams, waste composting and waste minimisation at source (including product packaging specifications for all catering concessions and service providers). Volunteers for 2010 and NGOs to be included where possible. Job creation in waste separation and recycling businesses to be targeted.	Short Term	Waste
	Develop Waste Management Guidelines for all municipal infrastructure and installations for 2010 and beyond – which can also be implemented by private sector. To include principles of waste separation, recycling and waste minimisation. To address waste management during demolition, construction and refurbishment, as well as operation of facilities.	Short Term	Waste
	Advocate / promote implementation of waste management guidelines in private developments and service agencies associated with 2010.	Medium Term	Waste
	Implement 2010 waste management system through installation of appropriate facilities and systems at stadia and / or at existing municipal waste management facilities.	Medium Term	Waste
	Implementation of appropriate CDM / carbon emissions reducing technologies.	Medium Term	Climate Neutral
Durban Africa	Lobby TGCSA to use energy efficiency, water efficiency, sustainable waste management criteria for grading hospitality /tourism industries that will service 2010 and beyond.	Short Term	Energy Waste resources Waste

Economic Development	Input into feasibility study for development of a Biodiversity / Green Resource Centre of Hub at the Umgeni Estuary. Site is municipal-owned land adjacent M4 bridge. To possibly include birding, hiking and trails info centre for Green Precinct and municipality as a whole; Guide pick-up point; Environmental Education and Conferencing Centre; Restaurant & crafts / indigenous plants complex. To use Green Building Technologies in construction and operation.	Short Term	Biodiversity
	Include safe bicycle and motorbike parking facilities at stadia, fan fest areas and at key stopping / tourist points on cycle routes.	Long Term	Transport
	Promote / assist bicycle hire businesses along beachfront / at stadium precinct.	Long Term	Transport
Environmental Management	Input into the carbon footprint studies, CDM feasibility study.	Short Term	Climate Neutral
	Develop Indigenous Landscaping Guidelines for all municipal facilities and infrastructure (including Corridors of Excellence, tourist routes, stadium precinct) established for 2010. To include protocol for acquisition and typologies of planting.	Short Term	Biodiversity
	Assist Umgeni River Conservancy and local businesses to "green" the Umgeni Estuary Precinct by alien plant clearing, trails development and maintenance, improving pedestrian and bicycle safety on local roads, improving safety and security. Assist in lobbying for funding for this and other alien plant clearing initiatives in Biodiversity / Green Precinct.	Short Term	Biodiversity
	Input into feasibility study for development of a canopy boardwalk and associated educational and guide facilities at Burman Bush.	Short Term	Biodiversity
	If feasible, assist in seeking funding, pursuing legal authorisations and implementing canopy boardwalk and associated facilities at Burman Bush, with increased safety and security measures in place.	Medium Term	Biodiversity
	Input into feasibility study for development of a Biodiversity / Green Resource Centre of Hub at the Umgeni Estuary. Site is municipal-owned land adjacent M4 bridge. To possibly include birding, hiking and trails info centre for Green Precinct and municipality as a whole; Guide pick-up point; Environmental Education and Conferencing Centre; Restaurant & crafts / indigenous plants complex. To use Green Building Technologies in construction and operation.	Short Term	Biodiversity
	Advocate / promote implementation of the Energy Efficiency Guidelines, Water Efficiency Guidelines, Landscaping Guidelines and Waste Management Guidelines in all municipal and private developments associated with 2010.	Medium Term	Energy Water Resources Waste Biodiversity
Imagine Durban 2100	Input into the development of Energy Efficiency Guidelines, Water Efficiency Guidelines and Waste Management Guidelines for all municipal infrastructure and installations for 2010 – which can also be implemented by private sector.	Short Term	Energy Water Resources Waste
	Input into the development of a sustainable waste management system for servicing the 2010 event and beyond. To include waste separation facilities, recycling waste streams, waste composting and waste minimisation at source (including product packaging specifications for all catering concessions and service providers). Volunteers for 2010 and NGOs to be included where possible. Job creation in waste separation and recycling businesses to be targeted.	Short Term	Waste
Metro Electricity	Investigate solar powered street / walkway lights for stadium precinct, beachfront and fan fest areas. Install these where possible.	Short Term	Energy
	Input into the determination of carbon emissions savings created by energy efficiency, renewable energy, installations at the stadium & in stadium precinct.	Short Term	Climate Neutral
	Inputs into CDM pre-feasibility study for the stadium.	Short Term	Climate Neutral
	Develop Energy Efficiency Guidelines for all municipal infrastructure and installations for 2010 – which can also be implemented by private sector.	Short Term	Energy
	Implementation of appropriate CDM / carbon emissions reducing technologies.	Medium Term	Climate Neutral

	Investigate and determine energy pricing strategy for broadcasters and service industries using the stadium during the event to incentivise minimised use.	Medium Term	Energy
	Advocate / promote implementation of Energy Efficiency Guidelines in all municipal and private developments associated with 2010, and integrate into Municipal Procurement Policy if possible.	Medium Term	Energy
Metro Water Services	Develop Water Efficiency Guidelines for all municipal infrastructure and installations (including landscaping) for 2010 – which can also be implemented by private sector.	Short Term	Water Resources
	Advocate / promote implementation of Water Efficiency Guidelines in all municipal and private developments associated with 2010, and integrate into Municipal Procurement Policy if possible.	Medium Term	Water Resources
Parks Dept	Input into the development of a sustainable waste management system for servicing the 2010 event and beyond. To include waste separation facilities, recycling waste streams, waste composting and waste minimisation at source (including product packaging specifications for all catering concessions and service providers). Volunteers for 2010 and NGOs to be included where possible. Job creation in waste separation and recycling businesses to be targeted.	Short Term	Waste
	Develop a landscaping concept for the People's Park adjacent the Stadium that creates an iconic local biodiversity experience. The concept may be put out as a concept competition.	Short Term	Biodiversity
	Develop Indigenous Landscaping Guidelines for all municipal facilities and infrastructure (including Corridors of Excellence, tourist routes, stadium precinct) established for 2010. To include protocol for acquisition and typologies of planting.	Short Term	Biodiversity
	Assist Umgeni River Conservancy and local businesses to "green" the Umgeni Estuary Precinct by alien plant clearing, trails development and maintenance, improving pedestrian and bicycle safety on local roads, improving safety and security. Assist in lobbying for funding for this and other alien plant clearing initiatives in Biodiversity / Green Precinct.	Short Term	Biodiversity
	Input into feasibility study for development of a canopy boardwalk and associated educational and guide facilities at Burman Bush.	Short Term	Biodiversity
	If feasible, assist in seeking funding, pursuing legal authorisations and implementing canopy boardwalk and associated facilities at Burman Bush, with increased safety and security measures in place.	Medium Term	Biodiversity
	Implement composting through installation of appropriate facilities and systems at stadia and / or at existing municipal waste management facilities.	Medium Term	Waste
	Advocate / promote implementation of the Landscaping Guidelines in all municipal and private developments associated with 2010.	Medium Term	Biodiversity
Practice Stadia Workstream	Internal review of practice stadia to determine opportunities for rainwater harvesting, grey water recycling. Implement any possible measures during construction / refurbishment.	Immediate	Water Resources
	Inputs to DEAT specialist review of stadia.	Short Term	Energy Water Resources
Real Estate	Plan and implement Park & Ride facilities for all events and to service maximum numbers possible as planned.	Immediate	Transport
	Input into feasibility study for development of a Biodiversity / Green Resource Centre of Hub at the Umgeni Estuary. Site is municipal-owned land adjacent M4 bridge. To possibly include birding, hiking and trails info centre for Green Precinct and municipality as a whole; Guide pick-up point; Environmental Education and Conferencing Centre; Restaurant & crafts / indigenous plants complex. To use Green Building Technologies in construction and operation.	Short Term	Biodiversity
	If feasible, assist in procuring funding and developing Biodiversity / Green Resource Centre Hub at Umgeni Estuary.	Medium Term	Biodiversity
Skills Development Unit	Undertake capacity building in municipal, private, NGO and civic sectors for improved implementation of greening targets, strategies and goals.	Medium Term Long Term	Capacity, Awareness & Marketing
Strategic Projects Unit	Plan and implement Park & Ride facilities for all events and to service maximum numbers possible as planned.	Immediate	Transport
	Assist / support SARCC-Metrorail in upgrading of rail stations and transport capacity where applicable / possible.	Immediate	Transport

	Internal review of practice stadia to determine opportunities for rainwater harvesting, grey water recycling. Implement any possible measures during construction / refurbishment.	Immediate	Water Resources
	Inputs to DEAT specialist review of stadium.	Short Term	Energy Water Resources
	Design safe pedestrian and cycle networks around (and linking where appropriate) the stadium precinct, beachfront, fan fest areas, Umgeni River Mouth, practice stadia.	Short Term	Transport
	Investigate and determine energy pricing strategy for broadcasters and service industries using the stadium during the event to incentivise minimised use.	Medium Term	Energy
	Advocate / promote implementation of the Energy Efficiency Guidelines, Water Efficiency Guidelines and Waste Management Guidelines in all municipal and private developments associated with 2010.	Medium Term	Energy Water Resources Waste
	Plan and resource municipal public transport fleet for improved capacity and quality of road transport. Ensure all linkages between key transport hubs, event venues and tourist attractions are made.	Medium Term	Transport
	With DEAT's assistance, investigate and if possible implement iconic hybrid / gas powered / electric vehicles for servicing the 2010 event (and beyond). May require a national directive for local implementation for 2010; or may involve local partnership with vehicle manufacturer for longer-term use of public transport vehicles using these technologies in Durban.	Medium term	Transport
	If feasible, assist in procuring funding and developing Biodiversity / Green Resource Centre Hub at Umgeni Estuary.	Medium Term	Biodiversity
	Include safe bicycle and motorbike parking facilities at stadia, fan fest areas and at key stopping / tourist points on cycle routes.	Long Term	Transport
Traffic & Transport, Roads	Plan and implement Park & Ride facilities for all events and to service maximum numbers possible as planned.	Immediate	Transport
	Assist / support SARCC-Metrorail in upgrading of rail stations and transport capacity where applicable / possible.	Immediate	Transport
	Implement public transport lanes along M4, Western Freeway, CBD / Inner City as planned.	Immediate	Transport
	Input into the determination of carbon emissions savings created by transport system installations at the stadium & in stadium precinct.	Short Term	Climate Neutral
	Inputs into CDM pre-feasibility study for the stadium.	Short Term	Climate Neutral
	Design safe pedestrian and cycle networks around (and linking where appropriate) the stadium precinct, beachfront, fan fest areas, Umgeni River Mouth, practice stadia.	Short Term	Transport
	Plan and resource municipal public transport fleet for improved capacity and quality of road transport. Ensure all linkages between key transport hubs, event venues and tourist attractions are made.	Medium Term	Transport
	Investigate promotion / incentivisation use of gas powered / hybrid / electric vehicles in privately owned public transport fleets. Needs national directive.	Medium Term	Transport
	With DEAT's assistance, investigate and if possible implement iconic hybrid / gas powered / electric vehicles for servicing the 2010 event (and beyond). May require a national directive for local implementation for 2010; or may involve local partnership with vehicle manufacturer for longer-term use of public transport vehicles using these technologies in Durban.	Medium term	Transport

B5. POSSIBLE ADDITIONAL FUNDING SOURCES FOR GREENING PROGRAMME

This section lists and provides a brief description of potential funding and partnering agencies that can be canvassed for greening project funding under the Greening Programme over and above that which is provided for under the eThekweni Municipality's 2010 Funding Stream as allocated by National Treasury. Agencies already mentioned in Section B2 as possible Sectoral Roleplayers that could provide funding to Programme initiatives have not been mentioned a second time here (including DEAT, KZN DAEA, Eskom, recycling agencies, WESSA, EKZNW).

B5.1 National Treasury / DEAT

As the national greening co-ordinator for the 2010 FIFA World Cup™, DEAT is in the process of negotiating programme funding from National Treasury. While it is likely that some funding will be made available from this source, the exact amount and allocation of this funding between Host Cities is not currently known.

B5.2 CIDA

The Canadian International Development Agency (CIDA) aims to reduce poverty, promote human rights, and increase sustainable development. CIDA's priorities are democratic governance, private sector development, health, basic education, equality between women and men, and environmental sustainability. CIDA provides funding for international development programs and projects through contributions to Canadian and international institutions of many kinds. The Agency also enters into contracts with Canadian companies for the implementation of CIDA programs and projects. Varying funding criteria exist for each type of applicant and for each type of program or project. CIDA is already working Durban through the Imagine Durban 2100 Project, of which CIDA is a partner.

B5.3 DANIDA

The Danish International Development Agency (DANIDA) is a Danish organisation situated within the Ministry of Foreign Affairs of Denmark. It was set up to provide humanitarian help and assistance in developing countries. DANIDA have a range of environmentally-related programmes from which funding could be sought to support the Greening Programme initiatives. These tend to focus on global issues of environment, such as climate change. DEAT has a close relationship with DANIDA through the Urban Environmental Management Programme, which is hosted in the DEAT offices in Gauteng.

B5.4 DBSA

The Development Bank of Southern Africa (DBSA) is one of several development finance institutions in South and Southern Africa. Its purpose is to accelerate sustainable socio-economic development by funding physical, social and economic infrastructure. DBSA's goal is to improve the quality of life of the people of the region. DBSA plays a multiple role of Financier, Advisor, Partner, Implementer and Integrator to mobile finance and expertise for development projects. Their focus is mainly on supporting the establishment of good practice in development and capital development projects. They may provide funding as a grant or loan finance. The DBSA would be approached in the Greening Programme for funding of capital projects and installations.

B5.5 FIFA Sponsors

The official FIFA Sponsors for the 2010 FIFA World Cup™ include: Adidas, Hyundai, Coca-Cola, Sony, MTN, First National Bank, McDonalds and Budweiser. These sponsors could be approached through the Local Organising Committee (LOC) to provide technical

assistance, partnerships of specific funding for greening initiatives. This would need to be done through DEAT as the mandated national 2010 World Cup Greening co-ordinator.

B5.6 GEF

The Global Environment Facility (GEF) helps developing countries fund projects and programs that protect the global environment and promote sustainable livelihoods in local communities. GEF grants support projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants. GEF funding into South Africa is largely co-ordinated through the UNDP, which liaises directly with DEAT. Potential GEF funding for Durban's 2010 Greening Projects would best be sought through the assistance / representation of DEAT, and currently seem to be directed towards the transport sector.

B5.7 SANBI

The South African National Biodiversity Institute (SANBI) aims to promote the sustainable use, conservation, appreciation and enjoyment of the exceptionally rich biodiversity of South Africa, for the benefit of all people. SANBI undertakes biodiversity-related research and co-ordinates a range of advisory groups. SANBI could be approached for funding of biodiversity-related studies or research for the Greening Programme.

B5.8 SAPPI

SAPPI is a forestry company. SAPPI has been involved with funding of the Dlinza Forest canopy boardwalk and will be approached for support in the proposed Burman Bush canopy boardwalk project under the Biodiversity Strategy.

B5.9 UNDP

The United Nations Development Programme (UNDP) is the UN's global development network, an organization advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. UNDP helps developing countries attract and use aid effectively.

B5.10 World Bank

The World Bank provides financial and technical assistance to developing countries providing low interest loans, interest-free credit and grants. A key focus area of the World Bank is currently in supporting CDM projects where developing countries benefit from trading carbon credits to first world countries. The Greening Programme could thus approach the World Bank for assistance with the CDM initiatives proposed under the Climate Neutral Strategy.

B5.11 WWF - SA

The Worldwide Fund for Nature (WWF) has become one of the world's largest independent organizations dedicated to the conservation of nature. In South Africa, five programmes are being established for Marine, Freshwater, Grasslands, Fynbos and Conservation Education, with a Climate Change sub-programme. Although WWF has limited funding of its own, it could be approached assist the Greening Programme through educational partnerships and assistance with access to funding from a range of donor agencies.

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- World Bank Website. www.worldbank.org/
- WWF-SA Website. www.panda.org.za

ABBREVIATIONS / ACRONYMS USED IN THE TEXT

CBO	Community-based Organisation	ICC	International Convention Centre Durban
CDM	Clean Development Mechanism (as per Kyoto Protocol)	KZN DAEA	KZN Dept of Agriculture and Environmental Affairs
CIDA	Canada International Development Agency	KZN DOT	KZN Department of Transport
DANIDA	Danish International Development Agency	NGO	Non-governmental Organisation
DEAT	National Department of Environment Affairs & Tourism	PPP	Public Private Partnership
DBSA	Development Bank of Southern Africa	SANBI	South African National Biodiversity Institute
DSW	Durban Solid Waste Department	SARCC	South African Rail Commuters Corporation - Metrorail
EKZNW	Ezemvelo KZN Wildlife	TGCSA	Tourism Grading Council of South Africa
ETA	eThekweni Transport Authority	TKZN	KZN Tourism Authority
FEDHASA	Federated Hospitality Association of Southern Africa	UNDP	United Nations Development Programme
FIFA	Fédération Internationale de Football Association	WESSA	Wildlife and Environment Society of Southern Africa
GDCF	Greater Durban Community Foundation	WWF	Worldwide Fund For Nature
GEF	Global Environment Facility		

APPENDIX 1: NOTES FROM SECTOR WORKSHOPS

Energy Sector Workshop Notes

23 May 2007 – 1pm, Room 226 City Engineers Building

Attendance List

Alf Oschatz -	BKS – Stadium Project Managers (alfo@bks.co.za)
Jessica Rich -	eThekwin Environmental Management Dept (richj@durban.gov.za)
Ambrose Adebayo –	Ambro Afrique – Stadium Architect (adebayo@ambroafrique.co.za)
Ken Woodley –	Ibuya Consulting – Stadium Elec Engineer (ken@ibuya.co.za)
Nina Saunders –	eThekwin Architectural Dept (saundersn@durban.gov.za)
Jay Kalichuran -	Metro Electricity (kalichuranj@elec.durban.gov.za)
Debra Roberts -	eThekwin Environmental Management Dept (robertsd@durban.gov.za)
Nicci Diederichs -	FutureWorks! (nicci@futureworks.co.za)
Sue Bannister -	eThekwin Special Projects Unit (bannisters@durban.gov.za)
Margaret McKenzie -	Imagine Durban (margaret@eject.co.za)

KEY ACTIONS FROM THE WORKSHOP

1	Energy requirements for the stadium and associated retail area, including proportional split between demand types (e.g. lighting, heating, air conditioning etc).	Ken W to send to Nicci Diederichs
2	Comparison of energy demand with and without energy efficiency measures in place (i.e. the energy savings that will actually be achieved at the stadium & retail area).	Ken W to send to Nicci Diederichs
3	Determine the cost of buying Green Energy from Bisasar landfill gas project to power the stadium etc.	Nicci D to arrange meeting with Lindsay Strachan & Jay K
4	Investigate the installation of solar water heating as an iconic “greening” intervention for the stadium and / or retail area.	Alf O, Ken W & stadium team to address & feed back to Sue B and Nicci D
5	Use of solar powered street & walkway lights to be investigated for inside stadium precinct as an iconic “greening intervention”.	Jay K to investigate with Metro Elec & stadium precinct team
6	Audit of materials used in the stadium & retail area to determine how energy footprint in materials sourcing has been minimised.	Alf O and Ambrose A to collate & send to Nicci D
7	Meet with Eskom to determine their interest in energy efficiency for the event in Durban & alignment of Eskom energy efficient light bulb programme with the event.	Nicci D to arrange

NOTES FROM THE WORKSHOP

Debra Roberts welcomed all to the meeting and provided a brief overview of the Greening Programme for the 2010 World Cup event in Durban.

Ambrose Adebayo, Alf Oschatz and Ken Woodley presented the overall design of the Moses Mahbida Stadium:

- Green Spaces
 - Green oriented parking in eastern end of stadium
 - Greening of hard platforms to take place where possible
 - Use of interlocking paving where possible – especially around press room area
 - Peace / Hero Park - green space – passive recreation also to be used for parking
 - Semi-pedestrianisation of Walter Gilbert Rd to take place
- Energy Systems
 - Storage of renewable energy a problem given irregular electricity demand profile
 - 400m2 solar panels would be needed to supply the stadium - too costly thus dropped as an option
 - At 2006 World Cup - few energy sources were located at stadium – alternative / green energy from outside stadia was bought
 - Option of using geothermal energy considered but not followed up, don't know if would be feasible / cost effective
 - Solar water heating: an option but water heating requirements for the stadium are limited; also lots of water would be used in short space of time – storage of solar heated water of high volumes difficult
 - Owing to high cost and difficulties of installing green energy systems at the stadium the focus is now on adopting an energy efficiency approach
 - Lamps – latest technology energy efficient models being used (use less power are smaller and more energy efficient to produce).
 - Using LED's for decorative lamps (more expensive but more efficient).

- Switch the lighting systems so that will only light areas where needed
- Water heating: heat pumps being used which are more energy efficient
- Centralised air conditioning (chillers) being installed – more energy efficient

1. **Discussion was held on possible green energy and energy efficiency targets and interventions that could be undertaken at the stadium and elsewhere:**

- Targets / Objectives
 - Energy use reductions to be demonstrated and maximised through:
 - Energy efficiency measures implemented at stadium & retail area (as proposed)
 - Use of solar powered street and walkway lighting where possible in the precinct
 - Showcase the use of renewable / green energy sources:
 - Complete powering of stadium by green energy (landfill gas-energy project if possible – to be investigated) – also showcases climate neutral objective
 - Showcase solar water heating initiative(s) at the stadium / retail area
 - Climate neutral event:
 - Complete powering of stadium by green energy (landfill gas-energy project if possible – to be investigated)
- Possible projects / interventions
 - Buy green energy to power the stadium
 - Get commitment to purchase green power from Bisasar landfill gas to energy project - full carbon and energy offset for the lifetime of the stadium
 - Determine carbon footprint of the event first
 - Determine costs of this energy – premium price to be charged? Jay, Roy and Lindsay – needed to investigate tariffs
 - Need to avoid double-trading C-credits
 - Major opportunity to install high profile / iconic solar water

- heating installation – needs to be investigated for stadium and retail area. This is the cheapest thing to do with solar energy.
 - Display needed on energy efficiency measures implemented somewhere in stadium for awareness and profiling.
 - Use of solar powered street / walkway lights.
 - Vandal-proof technologies developed in the UK
 - Investigate - Metro Electricity for inside stadium precinct
 - Energy efficient materials should be used for the stadium
 - Large spans, limits flexibility to use different materials
 - Cladding could be changed
 - Audit of materials used to determine energy footprint for materials used - from Alf / Ambrose
 - Local-sourcing of materials - 0.1% materials coming from outside South Africa
 - Opportunities to use facilities for other (non-stadium) services (usage of solar heated water can happen daily basis) need to be investigated for sustainability of investment
 - Incentivising broadcasters, hospitality industry to use greener energy, savings etc
 - Offset energy usage by including solar water heating in
 - housing programmes?
 - Public education critical
- Partners / Funding
 - DANIDA - Energy efficiency & CDM
 - ESKOM - demand management; energy awareness sponsorship?
 - Imagine Durban to assist with aligning existing energy demand management programmes (e.g. Eskom)
 - BP - solar panel projects in rural areas
 - REEEP - Dave Mercer
 - Need to investigate energy efficiency, green energy opportunities in other zones for 2010:
 - FAN Parks
 - Other stadia
 - Green guidelines needed
 - Railway station

Water Sector Workshop Notes

28 May 2007 – 9am, Room 226 City Engineers Building

Attendance List

Debra Roberts -	Greening Programme Leader - eThekwini Enviro Management Dept – robertsd@durban.gov.za
Nicci Diederichs -	Greening Programme Co-ordinator - Futureworks! – nicci@futureworks.co.za
Geoff Tooley -	eThekwini Coastal, Stormwater & Catchment Management Dept – tooleyg@durban.gov.za
Mark Graham -	eThekwini River Health Programme - GroundTruth – mark@groundtruth.co.za
Nina Saunders -	eThekwini Architectural Dept – saundersn@durban.gov.za
Margaret McKenzie -	Imagine Durban 2100 - Environdev – margaret@eject.co.za
Thomas Ferreira -	Imagine Durban 2100 - eThekwini Corporate Strategy Unit –
Ambrose Adebayo -	Stadium Architect - Ambrose Afrique – adebayo@ambroafrique.co.za
Neliswa Msomi -	Stadium Consortium – Project Manager – Felix Msomi - mdpbn@mweb.co.za
Sue Bannister -	eThekwini Strategic Projects Unit – bannisters@durban.gov.za
Bill Pfaff -	eThekwini Wastewater Management Dept – billpf@dmws.durban.gov.za
S'Thembiso Khumalo -	Stadium Consortium – Project Manager – BKS - sthembisok@bks.co.za
Peter Tooley -	Stadium Consortium – Water Engineer – Iliso Consulting – peter@iliso.com
Rob Dyer -	eThekwini Water Services -
Ganny Govender -	Stadium Consortium – Wet Services Engineer – LSG International - lsginter@telkomsa.net
Gary Kimber -	eThekwini Engineering Services – kimberg@durban.gov.za

KEY ACTIONS FROM THE WORKSHOP

1	<p>Review of stadium building and local precinct design to determine what water efficiency, water capture and grey water recycling interventions are possible (reasons why certain interventions NOT possible must be clarified). Includes:</p> <ul style="list-style-type: none"> - Storage space for roof water - Possible capture & storage of surface water - Capture of grey water, filtration & use for flush toilets / or landscape irrigation - Stormwater filtration system from potentially contaminated surfaces (waste collection areas, roads & hard-surfaced parking lots) - Use of pervious road / walkway surfacing - Sanware fittings for maximally reduced water demand <p>Report should contain a note on how much water the selected feasible interventions will save / recycle / capture (i.e. how potable water demand is reduced).</p>	<p>Alf, Ambrose & Consortium Technical Team</p>
2	<p>Contact to be made with DWAF and Health Authorities to determine implications of irrigating with grey water.</p>	<p>Nicci D</p>

3	Meeting to be arranged with Lindiwe Mahlangu to determine options for incentivising hospitality sector to include water-efficiency mechanisms.	Nicci D
4	FIFA design specifications for airconditioning, pitch grass species to be used where available.	Ambrose A

NOTES FROM THE WORKSHOP

Debra Roberts welcomed all to the meeting and explained the origin and aims of the Green Goal Programme and the purpose of the meeting.

Ambrose Adebayo, S'Thembisio Khumalo and Peter Tooley presented the progress and water-efficient design features of the Moses Mahbida Stadium, members of the Municipality provided inputs where necessary:

Stadium Rainwater Harvesting

- Various alternatives have been looked at as design has progressed
- Large roof, water collection to be done
- 36 downpipes from roof, piped separately to stormwater manholes (H water pressure) - siphonic system
- This is the only rainwater capture intervention in the design, as not able to capture surface run-off owing to need to pump captured water to an elevated storage point (high cost).
- No provision to capture water at high levels to use for toilet flushing etc, but may be possible to store & flush at Level 3 with rainwater
- Would have to change to conventional (non-siphonic) system if wanted to capture at higher level – COST?

Storage of Captured Rainwater

- 400m² required for rainwater storage
- Tanks proposed for SE embankments but retail area partly uses identified tank area - limiting the space available
- Possibility of using structures around the stadium for additional storage e.g. bottom of arch in diaphragm wall - 300 m² capacity
- Sporadic rainfall makes selection of optimum tank size difficult
- Fluctuating water table, makes difficult to capture and store water at ground level, 2.2m soil working space available only

Grey Water Recycling

- Has been discussion about possible separation of grey & black water
- Possibility of re-using grey water for irrigation may be limited by health concerns

Airconditioning System

- Heat pumps being installed instead of geysers, 1/3 of energy used.
- Variable speed drives in aircon system being installed, reduces elec consump
- Chiller plants located on Level 1
- FIFA specs for aircon systems must be met
 - Hospitality area, conference room & boxes - aircon only areas (necessary) - req by FIFA
- Natural ventilation should be maximised to reduce aircon requirements
- Facade is permeable to maximise natural & cross ventilation
- Facade fins design is uniform across whole stadium, do not need to reduce heat loading on the facade
 - Continuous tunnel / corridor designed to form ventilation system
 - Volume between facade and building as air movement corridor
 - Parking area, no sprinkler for better ventilation
 - Toilets - no aircon

Stormwater

- Culvert moved to allow for storage / attenuation
- Groundwater level is high - no space to store at ground level from subsoil drains
- Storage may be possible for gravity feed to areas outside
- Construction phase - silt protection required, taking place
- 400m² attenuation capacity designed for
- Limited additional hard surfacing on the site, thus no significant additional stormwater peaks expected

Fittings

- Long urinals, flushmasters being installed with user flush mechanism - 6l
- Could do less

- Stop system for taps on wash basins being installed
- Aerating taps to be used
- Low flow shower heads should be used with <10l per minute flows

Fire System

- Have to use potable water for safety reasons

Discussion was held on possible water efficiency, rainwater capture and grey water recycling targets and interventions that could be undertaken at the stadium and elsewhere:

Targets / Objectives

- Water use reductions
 - Water wise landscaping, planting plan to minimise irrigation requirements
 - Maximise reductions through procurement of water-saving fittings / systems
 - Maximise action in hospitality sector
- **Flood peak minimisation**
 - No increased flood peaks as a result of hard surfacing in the stadium precinct
- **Water / wastewater capture & recycling**
 - At minimum one iconic grey water capture & re-use intervention at the stadium - profile what is possible
 - At minimum capture roof water and store / use for landscape irrigation
 - Must try to maximise capture of surface flows for re-use
- **Water pollution prevention**
 - Need to include filtration of stormwater from stadium precinct

Possible projects / interventions

- **Need to review stadium design to ID realistic options and likely costs for interventions:**
 - Ensure minimum of 400m² rainwater storage to meet target of roof water capture & re-use
 - Silos in design for rainwater storage?
 - *Can't go too high or will not get water down the pipes*
 - *Could go for full storage at the bottom*

- *Massive cost implications blows feasibility of interventions*
- Grey water storage, filtering & re-use for toilet flushing & irrigation
 - Would assist in offsetting variable rainwater flows if dual system implemented
 - Types of detergents being used would need to be investigated
- Maximise use of low flush toilets, low flow showerheads for water demand management
- Need to look at amount of hard surface area being creating in the precinct
 - Surface type – maximise use of pervious surfaces for parking & roads
 - Scope for capture of surface water?
- Green interventions to temporary Viewers Centre
- Water heating under paving

• Develop Water efficiency Procurement Guidelines for all municipal infrastructure & buildings and private development associated with 2010

- eThekweni Architectural Dept in process of developing principles

5 practice stadia - opportunities for water use reductions, rainwater capture & recycling must be maximised

- Water wise landscaping
 - Irrigation system
 - *Use of groundwater for irrigation?*
 - Salinity & quality to be assessed
 - *Max water use efficiency in:*
 - Ad hoc field watering
 - In situ irrigation systems
 - Drought tolerant grass species, pitch & park lands
 - *FIFA requirements must be met for pitches, but opportunities for parklands must be taken up*
- Run-off from asphalt areas controlled / filtered to protect blue flag beaches & coastal assets
- Dissemination of info on what indiv households can do to promote individual action & offsets for additional water use
- Imagine Durban 2100 can assist through their media campaigning programme, including website
- Need to address the hospitality sector to determine possibilities for incentivising water efficiency action on a broad scale

- Green rating system
 - *Tourism sector leader to assist - Lindiwe Mahlangu*
 - Incentive system for private sector interventions
 - *Municipal by-laws for water & energy resource efficiency?*
 - *Max Green Goal credits for long-term benefit of this.*
- All new developments associated with 2010 - put in place measures that meet objectives
 - *8-12 new hotels being constructed for 2010*
- idea for water feature using captured rainwater
- shunting yard pollution a concern
- capture stormwater from the Berea?
 - water quality may be an issue
 - filtration of this prior to discharge to sea
 - polishing ponds?
 - health issues
 - high traffic area
 - irrigation in public spaces

Possible Partners & Funding Opportunities

- DANIDA
- One Planet Living - Water Harvesting Projects
- Umgeni Water - Increased water demand issue only – may be interested in demand management
- DWAF - Irrigation with grey water
- City Health
- DEAT
- FIFA
- Lever Bros - detergents OK to use in grey water irrigation systems
- WRC project - Mark Graham, detergents & treatment systems

Waste Sector Workshop Notes

5 June 2007 – 9am, Room 226 City Engineers Building

Attendance List

Debra Roberts -	Greening Programme Leader - eThekweni Enviro Management Dept – robertsd@durban.gov.za
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John Parkin -	Durban Solid Waste – johnpa@dmws.durban.gov.za
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Margaret McKenzie -	Imagine Durban 2100 - Environdev – margaret@eject.co.za
Sogen Moodley -	Corporate Policy Unit / Imagine Durban 2100 – moodleyso@durban.gov.za
Ambrose Adebayo -	Stadium Architect - Ambrose Afrique – adebayo@ambroafrique.co.za
S'Thembiso Khumalo -	Stadium Consortium – Project Manager – BKS - sthembisok@bks.co.za
Peter Tooley -	Stadium Consortium – Water Engineer – Iliso Consulting – peter@iliso.com
Zama Mncwabe -	Durban Chamber of Commerce, 2010 Info Desk – mncwabez@mweb.co.za

KEY ACTIONS FROM THE WORKSHOP

1	Report & pics of recycling of demolished Kings Park stadium prior to / during construction of Moses Mahbida Stadium to Nicci Diederichs.	Ambrose Adebayo / S'Thembiso Khumalo
2	Details on construction waste management protocol / EMP and ECO to be provided to Nicci Diederichs.	Ambrose Adebayo / S'Thembiso Khumalo
3	Need to meet with SPU to find out details of waste contractor to be appointed at stadium, fan fests etc.	Nicci Diederichs
4	Waste specialist workshop to be arranged to assist in detailing waste minimisation strategy for the event.	Nicci Diederichs (post-June 2007), with help from Imagine Durban 2100

NOTES FROM THE WORKSHOP

1. Debra Roberts welcomed all to the meeting and explained the origin and aims of the Green Goal Programme and the purpose of the meeting.

2. Ambrose Adebayo, S'Thembiso Khumalo and Peter Tooley presented the design & current status of waste management of the Moses Mahbida Stadium. Members of the Municipality added comments on Municipal waste management projects currently underway:

Existing Projects

- Recycling of demolished stadium
 - Crushed concrete used during construction of new stadium
 - For non-structural applications
 - Most trees removed & replanted, but not all, protecting others on site
- Stadium consortium not dealing with operational waste management
 - operator not yet appointed

- major constraint – need to know when this is likely to happen & whether will be DSW or private contractor
- **DSW recycling & separation programme**
 - entrepreneurs working with DSW, teams already trained to do this e.g. Musgrave
 - Collect a Can
 - Glass – reclaim
 - Paper – Mondi

Targets

- **Waste separation to be done at all municipal installations for 2010: stadium & practice facilities, fan fests etc**
 - Aim: maximise waste recycling & re-use
 - To be done by commercial & office installations in the stadium
 - Promote spectator / public use of waste separation bins
- **Waste separation to be promoted with hospitality & catering services**
- **Waste minimisation & recycling to be undertaken during demolition & building of stadium**
- **Waste minimisation standards to be applied to construction of new 2010 facilities by private sector (e.g. hotels)**
- **Life cycle management of stadium must address waste targets**
 - specifications to be drawn up as part of green goal for operator
 - contracts of stadium waste contractor must include waste separation function
 - green audit per annum to be submitted by contractor as per contract specifications
 - e.g. penalties for non compliance with green principles

Possible projects / interventions

- **Waste separation for recycling & re-use**
 - need to design waste separation bins for collection points @ stadium & around dbn
 - service yard for collection & waste sorting to be included in stadium design
 - servicing entrance under retail sector
 - static compactor required

- can baler to compress for transport
- not close to aircon intake (need to deal with health issues @ site)
- would still need an element of sorting
- separation should be mandatory for retail areas, restaurants & offices
- education arm of DSM can assist with teaching people to separate waste
- indicator signs at top of bins to show where they are in crowds
- frequency of bins to be standardised
- frequency of bin clearing important

○ **Plan for controlling littering**

- education of public
- signage
- policing

○ **Fan fest areas**

○ **Other training stadia & facilities**

○ **Waste free construction (e.g. practice stadia)**

○ **Package free food**

- specifications for catering industries required
- receptacles must be recyclable
- costs must be reasonable

○ **Composting project**

- garden waste from around stadium
- perhaps at Bisasar Rd

○ **Monitoring & evaluation of waste management system, & reporting**

- DSW would have a role
- NGO trainees could monitor during event - IZWA

Partners / Funding

- DSW
- composting
- education
- Parks
- composting
- IZWA

- meet with Muna to determine role
- education, capacity building, monitoring
- education about waste separation bins
- Recycling companies
- Mondi
- Collect a Can
- Reclam
- NAMPAK
- Waste Operators
- DANIDA
- SEDA

General

- Various types of waste will be produced
 - medical waste from first aid rooms
 - VIP boxes
 - construction waste

- retail / restaurant area
- public area waste
- offices
- organic waste from garden maintenance
- Composting initiative?
 - Bisasar to start composting trials in July
 - months time would know what is going on
- Waste management is a key opportunity for intervention as this doesn't require major design interventions to stadium
 - special workshop with waste minimisation specialists
 - Imagine Durban
 - other stadia
 - WSSD experience
 - waste operators
 - IZWA
- FIFA controls 75% of tickets, South Africa gets to sell 25% of
- Likely to be high foreign contingent in fan crowds

Transport Sector Workshop Notes

8 June 2007 – 9am, Room 226 City Engineers Building

Attendance List

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S'Thembiso Khumalo -	Stadium Consortium – Project Manager – BKS - sthembisok@bks.co.za
Nathan Iyer -	Stadium Consortium – Precinct Planner – Iyer Rothaug – nathan@iyerrothaug.co.za
Craig Simmer -	Stadium Consortium – Traffic Engineer – Iliso Consulting – craig@iliso.com
Sue Bannister -	eThekwini Strategic Projects Unit – bannisters@durban.gov.za

Apologies: Ambrose Adebayo – Stadium Consortium Architect – adebayo@ambroafrique.co.za

KEY ACTIONS FROM THE WORKSHOP

1	Details of design & construction method of the Kings Park Railway Station requested – to input Green Goal objectives & approaches where possible.	Craig Simmer
2	Information on location & capacities of park & ride facilities to be provided to Green Goal team for reporting on greening in the transport sector.	Logan Moodley
3	Profile of Public Transport lane projects for M4, western freeway & CBD to be provided to Green Goal team for reporting on greening in the transport sector.	Logan Moodley
4	Determine the cost differentials per public transport vehicle (capital, operating & maintenance) using standard fossil fuel technology vs hybrid / gas-powered / electric technology.	Logan Moodley / Craig Simmer
5	Need to meet with DEAT to determine possibilities for a national intervention / directive on using carbon-efficient vehicles (electric, gas-powered or hybrid) to service 2010.	Nicci D to arrange meeting with Joanne Yawich

6	Information on where the fan fest areas are, expected numbers to be using these areas, needs to be forwarded to Green Goal team for use in the Carbon Footprinting exercise being undertaken for the event.	Logan Moodley
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NOTES FROM THE WORKSHOP

Debra Roberts welcomed all to the meeting and explained the origin and aims of the Green Goal Programme and the purpose of the meeting.

Logan Naidoo, Carlos Esteves, Nathan Iyer and S'Thembiso Khumalo and Peter Tooley presented information on existing transport system projects and approaches planned to support / service the 2010 World Cup event:

Existing Green-Tinged Projects

- Increased public transport by rail
 - Strengthening N-S rail corridor – better utilisation of existing facilities
 - Umlazi to Duffs Road KwaMashu
 - Rail fleet being upgraded for 2010 - improved look & service reliability
- Kings Park Stadium Station Construction
 - In existing lines area close as possible to Walter Gilbert Road
 - Platform at grade with pedestrian circulation above
 - Significant sized station, designed to be integral to stadium
 - R70 mln secured for establishing by Dec 2009 - initial estimate: R100 mln
 - Possible future 30,000 - 40,000 sq m retail – contained in Masterplan
 - 2010 Transit point only – related specifically to sports precinct
 - SARCC Project - Prelim design available only at present
 - Could green architects review as part of national stadium review?
 - Target: 20,000 people to access stadium precinct by rail on a daily basis
 - Should create 40% savings on road shuttle requirements
 - Affordability of match tickets for locals? Will locals attend the event?
 - Fan fests will draw large numbers of local people
 - Fan fest areas close to stadium

- 3X as many people expected in fan fest areas than in stadium

- Park & ride facilities around stadium & outside city
 - Remaining 50,000 spectators expected to access stadium by road
 - Plan to use public transport for majority of crowd
 - Stadium precinct - approx 8,000 parking spaces in precinct
 - Privately owned parking facilities to be used for park & ride - need to secure leases
 - Dedicated areas for those with match tickets to park & ride
 - Large regional shopping centres
 - Commercial parking lots
 - Parking pool facilities
 - Sports clubs
 - Tied to People Mover buses
 - Needs to be supplemented during 2010 – contracted buses will also be used
 - 10 people mover buses only
 - Was designed to be a tourist based system
- Public transport lanes for more efficient public transport system
 - M4
 - Western Freeway
 - CBD / inner city
 - Funding from national DOT for this
- System of pedestrian / bicycle linkages in and around the stadium precinct
 - Link Golden Mile to stadium precinct
 - Widen culvert under M4
 - Improve permeability of NMR to bikes & pedestrians
 - Berea walk-through to stadium & station
 - NMR pedestrian link from city to peoples park
 - Route from stadium, golden mile to blue lagoon
 - Safe pedestrian link from Warwick Junction to NMR pedestrian route, beachfront etc
 - Early stage planning being undertaken
 - Recreational cycle routes - blue lagoon to Albert park
 - Recreational routes feasible now, commuter bike routes doubtful

- Waterfront links
- **LED traffic lights & energy efficiency**
 - Part of ITS strategy for 2010
 - Motorist information signage
 - Life cycle of cost savings:
 - 45 years to recoup capital costs through electricity savings
 - Replacement & safety - half the former 10 years, 5yrs has paid off its cost in maintenance savings

Targets

- Use / availability of public transport
 - Create positive public transport system legacy through development public transport lanes, new rail stations etc
 - Improved quality & accessibility of public transport
 - Measurables:
 - Quality of road & rail systems
 - Increased capacity of public transport systems
 - *Improved average travel speeds of public transport*
 -
- More sustainable transport systems - including non-motorised Transport
 - Create positive transport systems legacy, measured by:
 - Length of new pedestrian & bicycle routes created in Durban
 - Address existing issue of parking shortages and jams when getting to games in stadium area
- Carbon-emissions reducing technologies
 - One Iconic intervention at least
 - Link to emissions control targets:
 - % use of alternative technologies

Possible projects / interventions

- Iconic hybrid buses as part of 2010 public transport fleet
 - Could do a portion of the fleet with gas powered / hybrid
 - More expensive
 - Hybrid more realistic for 2010, technology more available
 - Availability of gas a problem
 - Maintenance of gas powered vehicles an issue
 - Needs to be generated as a requirement at a national level
 - Cost-effective procurement of vehicles / technology

- Standardised system used - can measure emissions benefits at a national level
- National 2010 fleet
- Specifications of buses would be needed
- Need to decide this soon
- Vehicle manufacturer to showcase hybrid vehicles?
 - Hyundai - FIFA sponsor
 - Technology not up to scratch as per Germany experience!
 - Renault?
 - Mercedes?
 - Toyota
- Locally manufactured
- This could be a city initiative rather than world cup if sponsorship protocol is a problem

- Training venues
 - Sustainable transport systems
 - Need to investigate
- Incentivise use of gas / hybrid vehicles in privately owned public transport fleets
 - Tax incentives?
 - Could link emission control policy linked to operating license
 - Zoned for city centre etc
 - Would need to have a cost-competitive supplier / service support for vehicles
 - Would need to be implemented at a provincial / national level
 - Does the city have mandate to do anything?

Partners / Funding

- SARCC
- GEF?
- Access through DEAT

General

- FIFA family would not be using public transport
- 5 games targeted for Durban
- If African games being played will appeal to local audiences

Biodiversity Sector Workshop Notes

1 June 2007 – 1pm, Room 226 City Engineers Building

Attendance List

Debra Roberts -	Greening Programme Leader - eThekweni Enviro Management Dept – robertsd@durban.gov.za
Nicci Diederichs -	Greening Programme Co-ordinator - Futureworks! – nicci@futureworks.co.za
Richard Boon -	eThekweni Environmental Management Dept – boonr@durban.gov.za
Alastair McInnes -	eThekweni Environmental Management Dept – mcinnesa@durban.gov.za
Julia Glenday -	eThekweni Environmental Management Dept – glendayj@durban.gov.za
Teresa Subban -	Corporate Policy unit / Imagine Durban 2100 – subbant@durban.gov.za
Penny Croucamp -	eThekweni Environmental Management Dept – croucamp@durban.gov.za

KEY ACTIONS FROM THE WORKSHOP

1	Need to ID horticulturists to be appointed to do landscaping in the stadium precinct & meet with them ASAP.	Nicci
2	Need to develop project proposal, costing & work plan for Burman Canopy Boardwalk & Umgeni Enviro Resources Centre	To be included in Greening Programme Work Plan due end June 07
3	Need to meet with Julie-May & Sue to discuss the Umgeni Estuary Enviro Resources Hub site & Burman Bush Boardwalk Project	Nicci
4	Need to develop landscaping protocol & guidelines for 2010 Precinct	To be included in Greening Programme Work Plan due end June 07

NOTES FROM THE WORKSHOP

Debra Roberts welcomed all to the meeting and explained the origin and aims of the Green Goal Programme and the purpose of the meeting. Debra then invited the meeting to present ideas for biodiversity projects relating to the 2010 world cup soccer event.

Existing Projects

- Co-op clearing alien plants along streams in Umhlangane
- Water quality & flood management for Umgeni Green Precinct

Biodiversity Targets

- 100% locally indigenous landscaping in stadium precinct

- Establish a Biodiversity or Environmental Precinct which adds value to the recreational offering of the 2010 Stadium Precinct & the ICC

Possible projects / interventions

- People's Park Landscaping
- Iconic landscaping for biodiversity experience
 - *Mini-botanic gardens?*
 - *Competition for developing landscaping themes*
 - *Must be representative of local biodiversity*
- Protocol for acquisition & typology of planting in precinct to be developed
- local sourcing must be promoted
- recycled plants to be used (e.g. from the stadium site)

- city nurseries to assist with producing plants
- instant planting
 - be cautious & control
 - move away from this
- **Biodiversity / Green precinct, maximise recreational offering to 2010 precinct & beachfront precinct**
- **Burman Bush**
 - *Forest Canopy Boardwalk*
 - 1 km long boardwalk, booking office & Educ centre & prof fees – R2.5 mln
 - Circular route, varied heights, tower etc
 - Need DWAF license, probably not EIA
 - Would need public participation process
 - Approx 2 years to plan & build
 - *Benefits*
 - Expanded ICC day trips for conference package
 - Legacy
 - *Enviro Education*
 - Training site for enviro guides
 - Self-sustaining: Funded by entrance fees
 - Perhaps use volunteers during 2010 event for extra guide loading
 - *Visitors facility*
 - Education, enviro etc
 - Have it at the top
 - Ringfence entrance fees to trust for maintenance
- **Umgeni Estuary**
 - *Hub: Resource Centre*
 - Birding, Canoe & Hiking Trails info centre
- Canoe trails & hire centre
- Beachwood mangroves - link to centre by boardwalk
- Umgeni River Trail
- Burman canopy boardwalk
- Guide pick-up point
- Enviro Education Centre
- Conference centre
- Lecture rooms
- Climate change displays
- Move mangrove education centre from Beachwood
- Restaurant complex
- Green building technologies
- **Dune projects**
 - *fencing*
 - *education*
 - *dune rehab work along coastline in Enviro Precinct & 2010 Precinct*
- **Snake park & bird park link into Enviro Precinct offering**
 - Coastal access as a link to estuary & enviro precinct from 2010 precinct needs to be looked at
 - Beach promenade, need to try to replicate Sun Coast approach – need to inform planning & design process
- **Alien plant clearing at Burman Bush, Beachwood**
- Iconic clearing
- Education benefit
- develop new business for alien clearing company / co-op

Partners / Funding

- WWF
- Assist in finding funding
- DANIDA
- May fund projects
- SAPPI
- DLINZA funders?
- WESSA
- education centre partners
- EKZNW, Birdlife RE Dlinza experience, costing etc
- How do guides work?, Own businesses?
- Greater Durban Community Foundation
- Parks - must be involved in discussions if they are going to maintain
- Christo & Sbu
- Funders for green interventions along Umgeni River
- Makro? Industries
- Industrial park - greening of
- Umgeni river conservancy