Mbombela Municipality

Greening Plan for the 2010 Soccer World Cup

environment & tourism
Department:
Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA

Mbombela Local Municipality Greening Plan for the 2010 FIFA World Cup

The preparation of this document was funded by:
Department of Environment Affairs and Tourism (DEAT)
Private Bag X447
Pretoria
0001

March 2009

Project Consultants:
Nicci Diederichs, Sue George and Nick Steytler

Cover Design:
Tanza Crouch

futureWORKS!
Making Environments Work for People!
PO Box 2221
Everton, 3625
Tel: 031 764 6449
Fax: 031 764 4907
www.futureworks.co.za

ABBREVIATIONS / ACRONYMS USED IN THE TEXT

BMS	Building Management System
CBO	Community-based Organisation
CDM	Clean Development Mechanism (as per Kyoto Protocol)
CEF	Central Energy Fund
CER	Certifiable Emissions Reduction
CIDA	Canada International Development Agency
DANIDA	Danish International Development Agency
DALA	Department of Agriculture and Land Administration
DEAT	National Department of Environment Affairs & Tourism
DBSA	Development Bank of Southern Africa
DLGH	Department of Local Government and Housing
DME	Department of Minerals and Energy
DWAF	Department of Water Affairs and Forestry
EDM	Ehlanzeni District Municipality
EIA	Environmental Impact Assessment
EPWP	Expanded Public Works Programme
FEDHASA	Federated Hospitality Association of Southern Africa
FIFA	Fédération Internationale de Football Association
GEF	Global Environment Facility
HOV	High Occupancy Vehicles
IDP	Integrated Development Plan
IWMP	Integrated Waste Management Plan
KMIA	Kruger Mpumalanga International Airport
LED	Local Economic Development
LOC	Local Organising Committee (appointed by FIFA)
MLM	Mbombela Local Municipality
NGO	Non-governmental Organisation
NIGF	Neighbourhood Improvement Grant Fund
PPP	Public Private Partnership
PT	Public Transport
SANBI	South African National Biodiversity Institute
SESSA	Sustainable Energy Society of Southern Africa
TGCSA	Tourism Grading Council of South Africa
UNDP	United Nations Development Programme
VER	Verifiable Emissions Reduction
WESSA	Wildlife and Environment Society of Southern Africa
WWF	Worldwide Fund for Nature

INTRODUCTION

Nelspruit (located within Mbombela Local Municipality - MLM) has been selected as one of nine cities in South Africa to host the 2010 FIFA Soccer World Cup. Four first round World Cup matches will be played (on 16, 20, 23, & 25 June 2010) at the new Mbombela Stadium currently being constructed in Nelspruit.

All 2010 World Cup Host Cities have signed a "Host City Agreement" with FIFA. The Host City Agreement includes a commitment to environmental sustainability – which places the onus on all Host Cities to formulate a plan of action to ensure effective implementation of environmental sustainability principles and approaches in the lead up to, during and after the 2010 event. Throughout South Africa, these environmental sustainability initiatives associated with the hosting of the 2010 World Cup are commonly being called "Greening" programmes and projects.

MLM has committed to this requirement for "Greening" of the 2010 event in its area of jurisdiction, and has established a "2010 Greening Workstream" that will drive the implementation of the required greening programme and projects.

The purpose of this 2010 Greening Plan is to provide a clear action plan for the MLM's 2010 Greening Workstream to minimize the environmental impact of hosting the 2010 Soccer World Cup and to leave a positive environmental legacy within the municipal area. In addition, the Plan aims to assist the MLM in allocating appropriate budgets for Greening activities, sourcing Greening project funding, and finding support networks for the implementation of Greening projects and activities.

At a broader level, the Department of Environment Affairs and Tourism (DEAT) is supporting the FIFA 2010 Local Organising Committee (LOC) in co-ordinating the National Greening Programme for the 2010 FIFA World Cup. The "Greening" plan, programmes and projects of the MLM, as one of the host cities, are aligned with the approaches and frameworks established by this National Greening Programme. The development of this Greening Plan for MLM has been facilitated and funded by the National Department of Environmental Affairs and Tourism.

It should be noted that this Greening Plan is the responsibility of the MLM to finance and implement. For this reason, the MLM may need to go through a comprehensive process of prioritising the projects within this plan that it wishes to implement in time for 2010, and other projects that it may wish to implement post-2010 as legacy initiatives, or that it cannot implement for financial or other reasons.

Zakumi – the official 2010 World Cup mascot – a Leopard with green hair. Interestingly, the mascot is a strong biodiversity icon for South Africa, with the Leopard being one of South Africa's most threatened animal species.

TABLE OF CONTENTS

SECTION A: BACKGROUND AND CONTEXT – GREENING THE 2010 WORLD CUP IN SOUTH AFRICA

A1 TRENDS IN EVENT GREENING

Since the early 1990's there has been a growing awareness of the potential negative impacts that major and mega events, such as large sporting events and conferences, can have on the people, environment and economy of the host country or city. These negative impacts may include:

- Change in land use through construction of event-hosting infrastructure, with associated destruction of natural environments and ecosystem services supply,
- The consumption of non-renewable resources (water, energy) to service the event,
- Pollution of soil, air and water,
- Greenhouse gas emissions that contribute to accelerated global warming and ozone layer depletion,
- Generation of large volumes of waste that take up valuable landfill space,
- Construction of expensive event-hosting infrastructure that is unsustainable to operate or maintain post-event.

This concern has given rise to a trend in "responsible event hosting", which essentially involves the inclusion of key sustainability principles in the development of event-hosting infrastructure, and in the operational plans for the event. This approach has become commonly known as "event greening", and most often includes the following aspects[1]:

- Implementation of environmental best practice,
- Maximisation of social and economic development,
- Building environmental awareness,
- Proactive monitoring, evaluation and reporting to ensure the greening process is a learning experience,
- Leaving a positive legacy.

A2 THE NATIONAL 2010 WORLD CUP GREENING CONTEXT

As part of the 2006 FIFA Soccer World Cup event in Germany, an event greening programme, aptly named Green Goal, was developed. The key aim of this programme was to ensure that the event was climate neutral, but it also included targeted environmental sustainability interventions in the following sectors:

- Energy,
- Water,
- Waste and
- Mobility / transport.

FIFA has indicated that it would like to see similar event greening programmes implemented in all countries that are host to the Soccer World Cup. Accordingly, an environmental protection clause has been included in FIFA's standard Host City Agreement for the 2010 Soccer World Cup that commits all Host Cities to ensuring that environmental sustainability issues are addressed:

[1] These five principles of event greening are included in the 2004 edition of "Leaving a greening Legacy, guidelines for event greening", produced by the Greening of the World Summit on Sustainable Development (GWSSD).

"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".

So, in being awarded the opportunity to host the 2010 FIFA Soccer World Cup, South Africa has agreed to address issues of environmental sustainability associated with hosting this event. Apart from the commitment of all Host Cities to this through Clause 6.7 of the Host City Agreement, the National Department of Environmental Affairs and Tourism (DEAT) is supporting the 2010 FIFA Local Organising Committee (LOC) to coordinate the Green Goal Programme for the 2010 FIFA Soccer World Cup event at a national level. DEAT, in collaboration with numerous stakeholders, including the LOC has developed the National Greening Framework, which provides the outline for this initiative. DEAT has also developed the guideline for the greening of large sporting events.

In addition, the LOC has developed a set of environmental objectives and national targets for host cities for greening 2010.

The South Africa Green Goal Programme has adopted the following greening thematic areas:

* Energy efficiency,
* Water efficiency,
* Responsible waste water management,
* Biodiversity and ecology,
* Sustainable waste management,
* Transport, mobility and access,
* Communication and awareness-raising.

A3 INTERNATIONAL BEST PRACTICE IN EVENT GREENING

Since the early 1990's, implementation of event greening has gained momentum internationally both in developing and developed countries. However, as there is no formally defined or recognised approach for event greening internationally, which has resulted in event greening programmes having different approaches and focal areas in each instance in which they are implemented. As this is still an emerging field, there is still much to be learnt about the most effective event greening approaches and strategies, and so most event greening programmes include a monitoring and evaluation component.

In terms of this learning to date, the following approaches are generally considered to represent **best-practice in event greening programmes**:

Text Box 1: Summary of Best Practice Approaches in Event Greening Programmes

* *Focus on positive environmental legacy for the host city / country,*
* *A lifecycle approach to estimating and measuring environmental impacts,*
* *Carbon neutrality in event hosting – i.e. preventing global climate impacts – with a focus on event users contributing towards the cost of offsetting emissions; and using this as a platform for establishing carbon offset projects that have the capacity to offset greater amounts of CO2 than produced by the event,*
* *Installation of energy efficient infrastructure to minimise the carbon footprint,*

- *Use of green energy for event operations – especially where this involves installing infrastructure that both produces and uses green energy (e.g. solar water heating, photovoltaic energy) as this ensures that the operational carbon footprint of the infrastructure is reduced in the medium and long term,*
- *Incentives for increasing the use of public transport systems (aligned to improved public transport infrastructure / services),*
- *Promoting the use of vehicles that meet appropriate fuel efficiency and emissions standards,*
- *Sustainable waste management – with a primary focus on minimising waste at source, and recycling maximally the waste that can't be avoided,*
- *Recycling of buildings / construction materials,*
- *Installation of water efficient infrastructure and systems (including landscaping), water capture and re-use systems,*
- *Green procurement policies that address both social and environmental concerns,*
- *Investment into ecosystems services supply, green landscapes for a better quality of life / urban landscape;*
- *Awareness raising and education aimed at achieving positive behavioural changes in society at large,*
- *Monitoring and evaluation aimed at measuring performance and learning from the greening programmes strengths and weaknesses.*

Some of the **milestone event greening programmes** and their **associated achievements** are evaluated below:

A3.1 Olympic Games

The Olympic Games have increased in number and extent over the last 20 years, with concomitant increasing environmental, social and economic impacts on the Host Cities. The environmental impact was recognised by the International Olympics Committee (IOC) when the Albertville Winter Games in 1992 stimulated a large public protest about environmental degradation and negative quality of life impacts on local people caused by the event. This resulted in environment being included as a third pillar of the Olympic Charter, along with sport and culture.

The Olympic Movement has since developed a Greening Policy, which has two main objectives:

- To promote the hosting of Olympic Games in such a way as to respect the environment and meet the standards of sustainable development,
- To promote awareness in the Olympic family and amongst other sports practitioners of the importance of a healthy environment and sustainable development.

The Sydney 2000 Olympics was the first to include an event greening programme. It set the benchmark for event greening by developing a green standard for major sporting events. There was an attempt to consider the environment in all aspects of planning, managing and staging of the games. It included remediation projects, transport systems, catering and waste management.

A summary of the greening approaches and best practices adopted at the Olympics is as follows:

Torino – 2006:

- Carbon neutral event – all emissions offset through €3 million in energy efficiency projects
- Water-saving projects reduced water storage required for snow-making from 350,000 m3 to 220,000m3,
- Sensitive wastewater handling that minimised pollution,
- Extensive construction monitoring and rehabilitation work,
- Tree planting, habitat creation and green engineering incorporated in infrastructure projects,
- Sustainable waste management planning,
- Sustainable transport planning,
- Eco-friendly buildings in Olympic Village,
- Green procurement policy,
- Promotion of European Eco-label for hospitality industry,
- Sponsors of the Games subject to voluntary "sustainability programme" – involving meeting a set of ethical and environmental standards.

Beijing – 2008:

- Air quality a major area of focus:
- relocation and refitting major polluting industries
- switch away from coal-fired energy generation towards natural gas
- older buses, taxis and cars have been replaced by those using compressed natural gas or new vehicles and fuels that meet tougher, internationally recognized emissions standards such as the Euro III standard
- Acceleration of the phase-out of ozone depleting chemicals and for the provision of energy efficiency and green energy appliances at buildings and sports venues
- Sustainable waste management (target 50% waste recycled), including re-use of treated wastewater for heating and cooling systems in the Olympic Village,
- Water conservation and rainwater harvesting, including drought-resistant planting and intelligent irrigation,
- Cleaner transport systems,
- Promotion of public transport usage: ticketing allowing free rides on public transport,
- New urban green belts including a 580-hectare Olympic Forest Park,
- Olympic Model Schools Programme – promotion of environment action and awareness,
- Other environmental awareness initiatives.

Vancouver – 2010:

The Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games has committed to enhance environmental performance at the 2010 Winter Games and increase public awareness of the importance of environmental protection and sustainable development, as well as to leave a lasting legacy in the host communities of Vancouver and Whistler, the province of British Columbia, Canada, and beyond, and to provide innovative ways to organize major events that minimize their environmental footprints before, during and after the Games.

London – 2012:

Sustainability Plan developed aims for a "One Planet 2012", including:

- Carbon neutral event,
- Standards for venue construction using environmental rating tools;
- Development of a sustainable food strategy that promotes local, seasonal and organic produce from environmentally responsible sources;
- Getting all suppliers and partners to sign a sustainability code, including sustainable sourcing and ethical trading.

A3.2 World Athletics Championships

The 2005 World Championships in Helsinki was the first event run by the International Athletics Associations Federation (IAAF) which included an event greening approach. The greening approach adopted has since been used as a best practice model by many other Athletics Associations.

The 'Helsinki Model' for greening deals with the following:

* Lifecycle management of environmental impacts,
* Climate change impacts,
* Material flows and efficiency (including waste avoidance and management),
* Water, chemicals and noise).

It details four phases during which greening considerations need to be taken into account: bidding phase, winning the bid, planning and preparation, operation and post-event phase.

A3.3 FIFA Soccer World Cup

The Green Goal programme established for the FIFA Soccer World Cup in Germany in 2006 included the following targets:

* To be the first "climate neutral" FIFA World Cup TM event.
* 20% reduction in refuse volumes in and around the stadiums
* 50% increase in spectators travelling to and from the stadiums on public transport
* 20% reduction in stadium energy consumption
* 20% reduction in stadium water consumption to relieve pressure on main water resources

The approach adopted in the Green Goal 2006 Programme was to first set national greening targets based on what could be achieved cumulatively across all Host Cities. Different greening activities were undertaken in each Host City depending on the strengths and resources of each, which then contributed to the achievement of the Green Goal targets nationally.

A3.4 World Summit on Sustainable Development

Otherwise known as Rio+10, the United Nations World Summit on Sustainable Development took place in 2002 in Johannesburg (South Africa) and included an event greening programme called "Greening the World Summit on Sustainable Development" (GWSSD). The goal of GWSSD was to minimize the negative environmental impact of the WSSD on Johannesburg and maximize the positive sustainable development legacy. The key approaches adopted and achievements included:

* Sustainable / green procurement,
* Energy efficiency,
* Purchase of green energy – 26% of energy used was from this source,
* Carbon fund established and carbon offset projects implemented – resulted in the establishment of the Johannesburg Climate Legacy (JCL) (40% of emissions offset),
* Sustainable waste management (27% of waste was recycled),
* Water conservation,
* Public awareness and education (focusing on behaviour change),
* Monitoring and evaluation.

SECTION B: CONTEXT – GREENING 2010 IN THE MBOMBELA MUNICIPAL AREA

B1 NELSPRUIT HOST CITY – PROFILE AND ATTRACTIONS

Nelspruit is the capital city of Mpumalanga Province, and is located within the Mbombela Local Municipal (MLM) area. It is centred on the Crocodile River, which is one of South Africa's largest rivers. MLM has a population of approximately 560 000 people. The Nelspruit urban area is surrounded mainly by game farms and citrus farmlands.

Nelspruit as a Host City for the 2010 World Cup is strategically located as a gateway for visitors to the Limpopo Transfrontier Park, which incorporates the Kruger National Park (South Africa), Limpopo National Park (Mozambique) and Gonarezhou National Park (Zimbabwe). It is also the most logical launch pad for tourists wanting to visit God's Window, Graskop, the Blyde River Canyon and Pilgrim's Rest. Already it is being marketed by private tour operators as a "safari destination" for the 2010 World Cup.

The fact that Nelspruit is so strategically located as a launch pad for a variety of nature-based and cultural tourist attractions is an important factor, as this will affect visitor numbers and local spending patterns during the games. This context should also inform the MLM's Greening Programme, given that many of visitors to the area during 2010 may associate the area with a specific theme (wildlife and expansive "African" landscapes) that can be used positively to generate environmental awareness and profiling of the MLM's greening interventions.

Nelspruit is also home to the Lowveld National Botanical Garden which is run by SANBI[2]. The Garden is 159 Ha in extent, straddles the Crocodile and Nels Rivers, and is geared up for visitors. Within the Gardens, the Crocodile River surges through a narrow, solid rock gorge that has been scoured out and pot-holed over millennia, while the Nels River tumbles down a waterfall from the west, to converge with the Crocodile in a serene pool on a bend in the river. The Garden includes vegetation typical of the Lowveld, with some 600 plant species occurring naturally, and more than 2000 plant species having been planted in the Garden.

The MLM are thus offers 2010 visitors a wide range of opportunities for nature-based / biodiversity experiences – both locally in Nelspruit and regionally in Mpumalanga Province.

B2 PREPARATIONS FOR HOSTING OF 2010 EVENTS IN NELSPRUIT

A new stadium (Mbombela Stadium) is being constructed by the Mbombela Local Municipality (MLM) to host the 2010 World Cup games, which is situated 5km west of the Nelspruit CBD on the N4. Four first round World Cup matches will be played on 16, 20, 23, & 25 June 2010, respectively. The stadium will have capacity to accommodate 46 000 spectators. The long term vision is that this new facility will serve the local community's sporting needs after the 2010 World Cup and elevate the capacity and status of MLM as a future host for other major sporting events.

The stadium has been designed with iconic steel "Giraffes" that act as roof supports. This design reflects the strategic location of Nelspruit as a "safari destination" or launchpad for sports visitors.

The new Mbombela Stadium is a greenfields development, and is one of only a few stadia being built to host the 2010 World Cup was that subject to an Environmental Impact Assessment (EIA) process. The EIA was

[2] South African National Biodiversity Institute.

approved for the development of the stadium, with a number of conditions. Of particular interest for the 2010 Greening Programme is Condition 4.9, which covers the need for mitigation for the loss of a wetland as a result of stadium construction:

- **On site mitigation:** Wetlands and associated tributaries in the Mbombela Stadium Precinct that do not fall within the stadium footprint must be rehabilitated and managed in a more sustainable manner.

- **Off site mitigation:** A wetland of equivalent or greater size, value and type, and in the same quaternary catchment as the one that will be lost as a result of construction of the stadium, must be rehabilitated and managed.

A number of other conditions are contained in the environmental authorisation for Mbombela Stadium which will result in a positive contribution to the "Greening" of the 2010 World Cup in MLM, including the need for alien plant clearing and control around the stadium, and the implementation of locally indigenous landscaping.

The MLM will also provide two official team training / practice venues, located at Kabokweni and KaNyamazane. Both are existing stadium facilities which will be upgraded.

- The KaNyamazane Stadium is located approximately 25km due east of Nelspruit along the R538. Historically, local football and community events have been hosted at the stadium, which has a maximum capacity of 15 000 spectators.

- The Kabokweni Stadium is located 30km to the north east of Nelspruit and has historically hosted local football and community events. It has a maximum capacity of 8 000 spectators.

The official Fan Park for Mbombela will be established at the Bergvlam High School in Nelspruit. A number of smaller public viewing sites are expected to be required throughout the MLM area. The details of the number and extent of these public viewing sites are not currently known.

The MLM has developed a transportation master plan for 2010 which includes:

- A system of new roads around the Mbombela Stadium Precinct;
- Parking and taxi / bus rank at Mbombela Stadium Precinct;
- Addition of High Occupancy Vehicle (HOV) lanes on 7km of the R40 (between the Nelspruit CBD and the Kruger Mpumalanga International Airport);
- New public transport interchanges being constructed in Nelspruit CBD, at Hazyview, White River and Riverside;
- Construction of the Northern Ring Road, providing an alternative route to the N4 through Nelspruit, and thus also an alternative route to the stadium (to be constructed by Trans African Concessions (TRAC) and the South African National Roads Agency).

According to initial estimates, the availability of tourist accommodation in the Nelspruit area may not be adequate for the anticipated visitor numbers during the 2010 World Cup. Consequently it could be anticipated that visitors may need to seek accommodation in the broader MLM area, including White River, Hazyview and Riverside.

Model of Mbombela Stadium

The Kruger Mpumalanga International Airport (KMIA) (approximately 7km north of Nelspruit on the R40) is a privately owned airport servicing the Nelspruit, MLM and Mpumalanga area. According to the KMIA, the airport can accommodate transfer of up to 400 passengers per hour.

SECTION C: GREENING APPROACH

C1 GREENING FOCUS AND AIMS

The key focus of the 2010 Greening Plan for Mbombela is to ensure that environmental impacts are minimised and a positive environmental legacy is achieved. This infers that Greening activities should be specifically focused around the 2010 preparations and operations, and in particular the Greening Plan should include all aspects of environmental legal compliance associated with the hosting of the event (including the construction of key infrastructure). In addition to this, Greening activities can seek to address any existing environmental issues in the Municipality associated with services, waste management systems, biodiversity protection (and associated ecosystem services supply) and cultural heritage protection – such that a positive environmental legacy is achieved.

There are a number of aims that the Mbombela 2010 Greening Plan is focused around achieving. These aims have been set in terms of international best practice in event greening, and the national context set by the South African Green Goal Programme.

Text Box 2: Aims of Greening 2010 in Mbombela

- Minimise ecological, social and economic impacts and costs;
- Maximise ecological, social and economic benefits;
- Minimise wastage of resources;
- Scale and type of installations and systems to service the event must be appropriate to the South African and Mbombela context;
- Financial sustainability;
- Leave a positive legacy;
- Establish iconic installations that showcase working examples of green (environmentally friendly) technologies;
- Promote environmentally sustainable behaviour and awareness.

C2 GREENING THEMATIC AREAS

The MLM's 2010 World Cup Greening Plan includes seven Thematic Areas with associated broad goals:

A. Carbon Emissions Management / Offsetting

i. Reduce carbon emissions from transport systems
ii. Reduce carbon emissions through reducing energy consumption
iii. Reduce embodied carbon in new event hosting buildings / infrastructure
iv. Maximise opportunities for carbon offsetting and sequestration

B. Energy Efficiency

i. Minimise consumption of energy
ii. Maximise use of renewable energy

C. Water Conservation and Management

i. Minimise consumption of water
ii. Maximise capture and recycling of water
iii. Avoid pollution of water resources

D. Sustainable Waste Management

i. Maximise the avoidance, reduction and recycling of waste

E. Efficiency of Transport and Access

i. Maximise availability, accessibility, efficiency and use of public transport systems
ii. Reduce carbon emissions from public transport systems
iii. Maximise availability and accessibility of non-motorised transport systems

F. Biodiversity and Ecosystem Services Management / Protection

i. Protect and enhance biodiversity and related ecological systems
ii. Maximise recreational / tourist experiences associated positively with biodiversity

G. Communication and Awareness Raising

i. Raise awareness of greening in all sectors
ii. Communicate greening progress made
iii. Market greening and attract funding

All of these Thematic Areas align with those set by DEAT and the LOC in the National Greening Framework. The goals associated with each Focus Area are intended to reflect the aims of the Greening Programme. These are translated into a range of targets, strategies and interventions further on in this Plan.

C3 IMPLEMENTATION OF THE 2010 GREENING PLAN

To achieve implementation of the requisite environmental protection and sustainability principles and goals in the hosting of 2010 Soccer World Cup events in MLM, **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 Mbombela 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.

Implementation of the 2010 Greening Plan needs to be allocated to a Programme Co-ordinator / Workstream Leader. In the MLM, the Greening Workstream Leader is the appropriate candidate for this responsibility.

It should be noted that NOT ALL PROJECTS CONTAINED WITHIN THIS PLAN MUST NECESSARILY BE IMPLEMENTED. It is anticipated that the Greening Workstream Leader will liaise with municipal Treasury Department and other line functions in order to prioritise which projects can be accommodated financially and within human resource constraints in time for 2010. The option exists to implement the remaining projects post-2010 as legacy Greening projects for the municipality.

Apart from co-ordinating and driving key Greening initiatives, one of the key roles of the 2010 Greening Plan (and Workstream) is to **facilitate the integration** of Greening approaches into the various infrastructural projects and operational systems established for hosting the 2010 Soccer World Cup in Nelspruit (which are implemented by other 2010 Workstreams and non-environmental municipal departments). The Greening Workstream can play an important role in assisting other municipal sectors to source funding for implementing their projects in a "greener" way, linking them to Greening support agencies and accessing Greening technologies and information. The Greening Workstream can play the lead role in gathering information on what greening interventions are achieved by other sectors, and showcase this as part of the MLM's media / communications campaign associated with the event.

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

C4 SUMMARY OF GREENING STRATEGIES

In order to achieve action in the seven Thematic Areas (see Section C2), this Plan sets up eight Programme-level strategies which, when implemented by the relevant sectors, will achieve the common and overarching greening aims and purpose. These strategies are detailed in Section D of this Plan, but are summarised here as follows:

1. Climate Impact Management Strategy

- Addresses potential climate impacts by reducing carbon emissions, and offsetting emissions that cannot be avoided through carbon emissions reduction and sequestration projects.

2. Energy Efficiency Strategy

- Addresses energy efficiency and green energy imperatives.

3. Water Conservation and Management Strategy

- Addresses water conservation, recycling and rainwater harvesting requirements.
- Protection of natural water resources.

4. Sustainable Waste Management Strategy

- Addresses the sustainable management of waste through waste minimisation and recycling.

5. Sustainable Transport Strategy

- Addresses the requirement of increased use of public transport and non-motorised transport systems to service the event.

6. Biodiversity Strategy

- Addresses the requirement for avoiding / minimising impacts on biodiversity resources, and investment into ecosystem services supply to achieve a positive legacy.

7. Awareness Raising and Reporting Strategy

- Increases public awareness of greening and changes perceptions about the environment.
- Collects and disseminates information on what is achieved in the Greening Programme.
- Creates capacity for implementation of greening strategies in all sectors.
- Stimulates further greening action for a greater positive environmental legacy from the event.

8. Monitoring and Evaluation Strategy

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

SECTION D: GREENING WORK PLAN

D1 CLIMATE IMPACT MANAGEMENT STRATEGY

The ***Climate Impact Management Strategy*** aims to address the potential impact on global climate of hosting the 2010 World Cup events in Nelspruit through reducing carbon emissions as much as possible, and offsetting the emissions that cannot be avoided. Both carbon emissions reduction and sequestration projects are suggested as means to offsetting unavoidable carbon emissions.

* **Carbon Emissions Reductions (CERs):** Reduction in carbon emissions through avoidance or permanent capture. The Clean Development Mechanism (CDM) under the Kyoto Protocol is one way to establish and fund projects that result in certifiable CERs. However, the costs of CDMs and the requisite certification process may be prohibitive. Projects that result in Verifiable Emissions Reductions (VERs) with a less onerous registration and certification process (and can be traded on the open market) may be a suitable alternative.

* **Sequestration:** The capture of carbon in trees (one tree can capture approximately 500kg of carbon over a 15 year period). All tree planting done for 2010, as well as potential reforestation projects and avoided deforestation projects can be included and counted either as VERs or voluntary carbon emissions reductions for 2010.

The Climate Impact Management Strategy has its own actions, but is linked to the Energy Efficiency, Sustainable Transport and Sustainable Waste Management Strategies, as these all have components that will assist in **reducing** carbon emissions associated with the event to the maximum extent possible.

D1.1 Achievements to Date / Work in Progress

ACHIEVEMENTS:

★ The approach used in constructing the Mbombela Stadium was to source and buy the materials locally wherever possible. This approach will have significantly reduced the carbon emissions associated with stadium construction.

WORK IN PROGRESS:

➔ The MLM plans a City Beautification Programme for 2010, which will involve significant tree planting in the urban and rural parts of Nelspruit. The potential sequestration benefits of this Programme can be quantified as voluntary carbon sequestration achievements.

➔ The national 2010 Greening Programme has commissioned the calculation of the national carbon footprint of the 2010 World Cup. This work will deliver an estimate of the applicable / proportional carbon footprint associated with hosting the 2010 World Cup in MLM / Nelspruit. This can be used in the Climate Impact Management Strategy to measure the relative achievements of CER and sequestration projects in reducing the climate impacts of hosting the event.

D1.2 Strategy Table

TARGETS	ACTIONS	PROJECT DRIVER & COLLABORATORS
1. Measure and report on Climate Impact Management Achievements	1A. CARBON FOOTPRINT Provide necessary information for the calculation of, and obtain Nelspruit's Carbon Footprint estimate from national footprinting study. Or conduct own carbon footprinting exercise.	DRIVER: Greening Workstream
	1B. REPORTING ON CARBON FOOTPRINT REDUCTIONS AND BEST PRACTICE GUIDEBOOK Account for carbon sequestration potential of trees planted in City Beautification Programme, in stadium, practice stadia and fan park landscaping. Evaluate design and specifications and construction process of Mbombela	DRIVER: Greening Workstream COLLABORATORS: Solid waste management

	Stadium in respect of achievements in embodied carbon emissions reductions and reduction in energy footprint (with associated carbon savings). Also account for carbon savings from sustainable transport systems implemented to service the event and sustainable waste management systems implemented. Calculate carbon emissions reductions and sequestration achieved as a % of total estimated carbon footprint. Produce best practice carbon emissions minimisation guide for use in Municipal construction tenders / contracts (including for Training Venue upgrades).	Transportation Workstream Parks Department Beautification Workstream Stadium Design Team
2. Minimise / avoid carbon emissions wherever possible	2A. LOBBY FOR LOW EMISSIONS TRANSPORT FLEET Where possible, ensure that public transport vehicles servicing 2010 (and beyond) meet appropriate emissions standards (Euro II) and have maximum fuel economy.	DRIVER: Greening Workstream COLLABORATOR: Transportation Workstream
3. Offset / sequester maximum unavoidable emissions possible.	3A. SUPPORT / MAXIMISE TREE PLANTING Collaborate with Beautification Workstream to maximise number of trees planted throughout the Municipal Area.	DRIVER: Greening Workstream COLLABORATOR: Beautification Workstream Parks Department
	3B. CARBON SEQUESTRATION PROJECT DEVELOPMENT Identify potential carbon sequestration projects (reforestation, mass tree planting around 2010 venues etc) and develop these to Plan level. Submit Plans for funding.	DRIVER: Greening Workstream COLLABORATOR: Environmental / Sustainability Department Parks Department
	3C. CARBON EMISSIONS REDUCTIONS PROJECT DEVELOPMENT Undertake a Carbon Emissions Reductions project identification, prioritisation and feasibility assessment process (using suitably qualified specialists). Develop funding applications and project implementation plans where appropriate.	DRIVER: Greening Workstream COLLABORATORS: Environmental / Sustainability Department All other line departments with potential energy savings projects (traffic & transportation, housing, buildings management, architectural services, wastewater management, solid waste management etc)

D2 ENERGY EFFICIENCY STRATEGY

The energy efficiency strategy aims to minimise energy usage during the hosting of the 2010 World Cup through appropriate demand management measures, and create a positive legacy for the MLM by developing energy efficient infrastructure as part of the preparations to host the event. In addition to this, the strategy aims to promote the development of renewable / green energy supply systems as part of the event hosting strategy. This will be done through the municipality including at least one renewable energy initiative in its 2010 infrastructure. Key users of energy at event hosting sites include:

* Floodlights (stadia and fan parks),
* Air-conditioning and heating systems,
* Internal lighting and external night and feature lighting,
* Water heating systems for ablutions and catering facilities,

- Cookers, ovens and refrigerators at event venues,
- Scoreboards, large screen TVs and broadcasting equipment.

The MLM Integrated Development Plan (IDP) and Local Economic Development Strategy have both acknowledged that local energy supply capacity is an issue within the municipal area. Compounding the demand pressure is the fact that the 2010 Soccer World Cup will be taking place in the winter months when electricity demand is normally at its highest. This has initiated an evaluation of local power supply network abilities and the investigation of alternatives to ensure that energy supply services are boosted in time for the 2010 World Cup. This context provides an excellent motivation for the installation of green energy facilities during the preparations for the 2010 World Cup, as this will not only represent a strategic greening intervention in terms of the Greening 2010 objectives, but will also assist in achieving a positive legacy impact by addressing an existing sustainability issue in the MLM.

D2.1 Achievements to Date / Work in Progress

ACHIEVEMENTS:

★ The design and fittings of Mbombela Stadium have included energy efficiency imperatives. The following interventions have been included which reduce the need for energy intensive air-conditioning and lighting:

- Inclusion of roof overhangs designed for summer shading and allowing winter sun in,
- Maximisation of natural ventilation through leaving as many roofed spaces as possible open to the outside (i.e. roofed spaces with no side walls),
- Incorporating opening windows wherever practical,
- Minimising windows on the west façade to reduce heat build up and glare,
- Construction of the external building envelope as a cavity wall to reduce heat transfer,
- Limiting air conditioning to essential spaces only,
- Selection of an energy efficient air conditioning plant (chilled water system) which utilises minimal refrigerants,
- Split airconditioning units installed for all utility rooms that use an environmentally friendly refrigerant,
- Installation of a modular Building Management System (BMS) to control pumps and plant, light switching - minimizing energy wastage. The BMS includes sub-metering which allows future rationalisation and increased energy efficiency,
- Installation of a heat recycling system from the air conditioning plant that generates hot water for use during peak loads,
- Installation of low energy lamps wherever feasible,
- Investigations being made into getting 10% of site lighting to be solar powered,

WORK IN PROGRESS:

➔ The MLM developed an Energy Saving Strategy during 2008 when load-shedding was a national phenomenon associated with Eskom's shortfall in bulk supply capacity. A number of initiatives were implemented during this period through the MLM area that have reduced energy demand (and the carbon footprint of the MLM). The status of this Strategy and its recommendations for the investigation into renewable energy possibilities is not currently known.

➔ An opportunity for the revitalization of an existing but dysfunctional hydroelectric scheme in the MLM has been identified by the MLM as a potential greening legacy project which can be picked up as part of the 2010 Greening Plan. Should this be considered feasible and be implemented, it may be included as part of the MLM's Climate Impact Management achievements.

➔ Gelsenkirchen Municipality in Germany has provided R240,000 to MLM for the implementation of a solar energy project at the Mbombela Stadium. Options are being investigated to use these funds for either a solar pump for pitch irrigation or solar lighting in the Stadium Precinct.

D2.2 Strategy Table

TARGETS	ACTIONS	ACTION DRIVER & COLLABORATORS
1. Maximise & demonstrate energy use reductions: i. Energy efficiency measures implemented at stadium, training venues and fan parks. ii. Promote energy reductions in broadcasting, hospitality & catering service sectors & municipal and private sector buildings / facilities.	1A. MAXIMISE ENERGY EFFICIENCY AT 2010 VENUES & ALONG BEAUTIFICATION ROUTES Energy efficient designs and fittings to be incorporated into Training Venue upgrade plans, Fan Park plans and Beautification Plans. This approach needs to be built into the tender brief and contract conditions. CFLs to replace standard street lights along City Beautification routes (approx 20km).	DRIVER: Training Venue Workstream Fan Park Organisers Beautification Workstream / Parks Dept COLLABORATORS: Municipal Electricity Department Greening Workstream
	1B. PROMOTE ENERGY EFFICIENCY IN PRIVATE SECTOR Promote the adoption of DSM and energy efficiency approaches in all private sector agencies associated with 2010 and by individuals – particularly the broadcasting, hospitality and catering sectors.	DRIVER: Municipal Electricity Department COLLABORATORS: Stadium operator Training Venue operators Fan Park operators MATCH FEDHASA
2. Implement at least one renewable energy project.	2A. RENEWABLE ENERGY AT MBOMBELA STADIUM Implement heat recycling initiative at Mbombela Stadium for water heating (from aircon plant) as planned and monitor effectiveness and energy savings. Investigate best use of funds provided by Gelsenkirchen Municipality for a solar energy initiative at the stadium and implement.	DRIVER: Stadium Workstream Stadium Project Team COLLABORATOR: Greening Workstream
	2B. RENEWABLE ENERGY INTERVENTIONS AT 2010 VENUES Investigate possibilities for renewable energy supply for Fan Park and at Training Venues (solar water heating and PV cells for lighting). Identify feasible initiatives and implement for 2010.	DRIVER: Greening Workstream COLLABORATORS: Training Venue Workstream Fan Park Workstream Municipal Electricity Department
3. Facilitate investigations into the implementation of a renewable energy scheme in Nelspruit as a legacy project.	3A. RENEWABLE ENERGY LEGACY PROJECT Hire appropriate specialists to undertake feasibility investigations into potential hydroelectric schemes, wind energy, landfill gas to energy, biogas (etc) projects in MLM area; prioritise feasible projects and identify funding sources for implementation.	DRIVER: Greening Workstream COLLABORATORS: Municipal Electricity Department Waste & wastewater Management Depts DEAT / LOC Carbon Working Group

D3 WATER CONSERVATION AND MANAGEMENT STRATEGY

The water conservation and management strategy aims to minimise water use in the hosting of the 2010 World Cup, and include sustainable water management systems in all 2010 infrastructure such that a positive legacy is achieved into the future. Key water users and potential sources of water resource pollution at event hosting venues include:

- Pitch irrigation,
- Landscape irrigation,
- Ablutions (toilets, urinals, hand basins, drinking fountains),
- Catering ablutions (sinks),
- Cleaning (spraying down of waste areas, spectator seating areas and all other public areas),
- Polluted run-off from parking areas.

The MLM currently faces substantial challenges in respect of bulk water supply. Any contribution that the 2010 Greening Plan can make to the installation of water efficient infrastructure and irrigation systems will thus be an important legacy achievement.

D3.1 Achievements to Date / Work in Progress

ACHIEVEMENTS:

★ The design and fittings of Mbombela Stadium have included water conservation and management imperatives. The following interventions have been included which significantly reduce water demand and pollution risks:

- Rainwater from roof areas is piped in a separate system to a retention pond which can hold 30,000m3 of roof water and attenuate a further 24,000m3 of stormwater flow from hard surfaced areas in the Stadium Precinct,
- An artificial reed bed has been created to filter the retention pond water for irrigation purposes,
- Pitch water (excess from irrigation and from rainfall) is captured and recycled via the reed bed filtration system,
- The 13,000m2 retention pond with reedbed system will not only improve the water quality, but will also be a landscape asset in the sports precinct,
- Controlled urinal flush mechanisms centrally controlled by the Building Management System (BMS) to optimise flush intervals during game and empty stadium conditions,
- Wash basin taps installed with push button flow restrictors and metered to reduce wastage,
- Sub metering systems will be installed to assist management with future water use rationalisation.

WORK IN PROGRESS:

➔ The Record of Decision for Mbombela Stadium (resulting from the EIA process) requires that a Stormwater Management Plan be prepared for the Stadium Precinct, and that an area of wetland be established downstream of the stadium as an offset for the loss of wetland area on the site where the stadium was constructed. This wetland has the potential to significantly improve water quality and further buffer any accelerated stormwater flows from the Stadium Precinct.

D3.2 Strategy Table

TARGETS	ACTIONS	ACTION DRIVER & COLLABORATORS
1. Minimise water use at event hosting venues (Stadium, training venues and fan parks): i. Water wise landscaping, planting plan and irrigation systems to minimise irrigation requirements. ii. Maximise reductions through procurement of water-saving fittings / systems. iii. Water recycling systems for pitch irrigation / landscape irrigation.	1A. MAXIMISE WATER USE EFFICIENCY AT 2010 VENUES Water efficient designs and fittings, and landscaping and irrigation plans (including consideration of grey water recycling, rainwater harvesting) to be incorporated into Training Venue upgrade plans, Fan Park plans. These need to be included in tender briefs, contract conditions and TOR operators.	DRIVERS: Training Venue Workstream Fan Park Organisers COLLABORATOR: Greening Workstream
	1B. WATER CAPTURE & RECYCLING AT MBOMBELA STADIUM Implement rainwater / pitch water capture, filtration and recycling system as planned at Mbombela Stadium. Monitor water savings.	DRIVER: Stadium Workstream Stadium Project Team Stadium operator

		COLLABORATOR: Greening Workstream
2. No increased flood peaks as a result of hard surfacing in the Stadium Precinct. AND avoid pollution of natural water resources caused by new infrastructure / 2010 events	2A. STORMWATER MANAGEMENT PLAN: MBOMBELA STADIUM PRECINCT Prepare and implement a stormwater management plan for the Mbombela Stadium as per ROD conditions. Must include water quality protection measures. Plan must cover construction and operational period. Plan must be included in TOR / contract for Stadium Operator.	DRIVER: Stadium Workstream Stadium Project Team COLLABORATORS: Greening Workstream Stadium Operator Municipal Stormwater Management Department
3. Demonstrate the use of Ecosystem Services in water filtration and stormwater attenuation.	3A. WETLAND REHABILITATION: MBOMBELA STADIUM PRECINCT SEE PROJECT 1A of BIODIVERSITY STRATEGY. Construct wetland downstream of stadium in conjunction with reedbed / retention pond system as a water filtration and stormwater attenuation system (and meet ROD requirements).	DRIVER: Stadium Workstream Stadium Project Team COLLABORATORS: Greening Workstream Stadium Operator Municipal Stormwater Management Department Municipal Environmental Management Department

D4 SUSTAINABLE WASTE MANAGEMENT STRATEGY

The Sustainable Waste Management Strategy aims to develop an integrated 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 minimise waste generated by construction / refurbishment activities and the hosting of the 2010 events in the MLM. The private sector will be encouraged or incentivised to participate in achieving reductions in waste outputs and undertaking waste separation and recycling.

In MLM there is need to upgrade existing waste management machinery, infrastructure and facilities. This is obviously a very costly exercise and it is unlikely that funds obtained for 2010 Greening will be sufficient to address this need. The focus in this plan is therefore on operational management which is not as costly and aims to create new mindsets around sustainable waste management that will have benefits far beyond the 2010 World Cup. A key approach to sustainable waste management in MLM for the 2010 World Cup is waste avoidance or minimisation at source, which will ensure that the additional pressure of the 2010 World Cup on the existing waste management infrastructure of MLM is minimised.

The key areas of waste generation associated with the 2010 event include:

* Demolition and construction of event hosting infrastructure,
* Waste generated at event hosting facilities associated with food and beverages, and catering,
* Waste generated at hospitality facilities associated with servicing spectators,

* Waste generated through operation of the 2010 event hosting facilities during and beyond the events (light bulbs, paper towels from toilet areas, cleaning materials waste).

D4.1 Achievements to Date / Work in Progress

ACHIEVEMENTS:

★ The design of Mbombela Stadium has included space allocation for waste separation and recycling.

WORK IN PROGRESS:

➔ The MLM are in the process of developing an Integrated Waste Management Strategy to address waste management issues broadly in the MLM area.

➔ Waste collection SMMEs set up by DEAT-DPLG could be diverted to FIFA venues for event duration to maximize the benefit to the SMME's and address the intensity of the waste management over the short period of the event.

➔ A sponsored multi-bin system may be used.

D4.2 Strategy Table

TARGETS	ACTIONS	ACTION DRIVER & COLLABORATORS
1. Establish a waste management system minimises waste at source, includes waste separation & recycling streams, and creates sustainable jobs – to service 2010 and beyond. Maximise the value in waste through re-use of the waste from the hosting of the 2010 World Cup	1A. SUSTAINABLE WASTE MANAGEMENT STRATEGY FOR 2010 Develop a Sustainable Waste Management Operational Plan for each 2010 venue to be included in the EMS for each venue. Must estimate waste volumes and types from all 2010 venues and system for servicing the 2010 event and beyond that meets stated targets. The plan must identify key infrastructural gaps / shortfalls for action in terms of achieving a positive waste management legacy after 2010. All non-recyclable waste from events with potential value for re-use (furniture, banners, signage etc) should be identified and either: auctioned off to fans as mementoes, re-used in the manufacture of memento products (e.g. bags from banners) and sold by the PLM. Funds from these sales should be allocated to an appropriate greening legacy project. Implement sustainable waste management plan.	DRIVER: Greening Workstream COLLABORATORS: Solid Waste Management Department Stadium Workstream Stadium Project Team Training Venue Workstream Fan Park Workstream Stadium operator Training venue operators Fan Park operator
2. Minimise waste & maximise recycling during all municipal infrastructure development and refurbishment.	2A. CONSTRUCTION WASTE RECYCLING All construction and demolition contracts must include a waste management programme that maximises recycling of waste, and responsible disposal of all non-recyclable waste. To be included in tender briefs and contract conditions.	DRIVER: Stadium Workstream Training Venue Workstream Fan Park organisers Transportation Workstream COLLABORATOR: Greening Workstream
3. Identify and facilitate feasibility studies for sustainable waste management legacy projects.	3A. WASTE AVOIDANCE / MINIMISATION LEGACY PROJECT Appoint appropriate specialists to conduct feasibility studies on possible waste minimisation and avoidance projects for the municipality beyond 2010 that will significantly reduce waste landfilled over time (e.g. wastewater treatment plant sludge composting initiatives, garden refuse composting initiatives, waste re-use projects etc).	DRIVER: Greening Workstream COLLABORATORS: Solid Waste Management Department Wastewater management department Parks department

D5 SUSTAINABLE TRANSPORT STRATEGY

The Sustainable Transport Strategy aims to achieve an improved system and quality of public transport to service the 2010 event that can 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 issues 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 the MLM area through the upgrading of public transport facilities and systems, and the establishment of a safe network of cycle and pedestrian routes.

Key movement corridors that require servicing will include:

* Spectators travelling into Nelspruit from regional destinations to attend the event (i.e. pressure on regional road networks and local road networks),
* Spectators travelling from in / around Nelspruit to the Mbombela Stadium, the Fan Park, public viewing sites and the Training Venues – and needing to either walk from public transport nodes to these venues, or to park cars nearby,
* Travellers to and from the Kruger Mpumalanga International Airport.

D5.1 Achievements to Date / Work in Progress

ACHIEVEMENTS:

- ★ A Transport Operational Plan has been prepared for the 2010 World Cup in MLM.
- ★ The above plan predicts 45% private transport use, 55% public transport use (48% road based, 7% rail).
- ★ The Plan includes:
- ★ Park and ride facilities,
- ★ Parking at the stadium,
- ★ A system of new roads around the Mbombela Stadium Precinct;
- ★ Parking and taxi / bus rank at Mbombela Stadium Precinct;
- ★ Addition of High Occupancy Vehicle (HOV) lanes on 7km of the R40 (between the Nelspruit CBD and the Kruger Mpumalanga International Airport);
- ★ New public transport interchanges being constructed in Nelspruit CBD, at Hazyview, White River and Riverside;
- ★ Construction of the Northern Ring Road, providing an alternative route to the N4 through Nelspruit, and thus also an alternative route to the stadium (to be constructed by Trans African Concessions (TRAC) and the South African National Roads Agency).

WORK IN PROGRESS:

- ➔ According to the Mbombela Transport Operations Plan, the 2010 World Cup is viewed as a catalyst to achieve the goals and visions of the Mbombela Integrated Transport Plan and promotes sustainable Public Transport Infrastructure and Systems.

D5.2 Strategy Table

TARGETS	ACTIONS	ACTION DRIVER & COLLABORATORS
1. Minimise traffic congestion & parking requirements at all event venues for 2010 & beyond by promoting use of public transport and park and ride systems.	1A. PARK AND RIDE Plan and implement Park & Ride facilities for all 2010 events and to service maximum numbers possible as planned.	DRIVER: Transportation Workstream COLLABORATOR: Greening Workstream

2. Increase quality, accessibility & maximise levels of use of public transport for 2010 & beyond.	2A. PUBLIC TRANSPORT FACILITIES Upgrade public transport infrastructure and routes as planned.	DRIVER: Transportation Workstream COLLABORATOR: Greening Workstream
	2B. PUBLIC TRANSPORT OPERATORS Engage Taxi's and Buses for establishing operating protocols in and around Stadium Precinct for reduced traffic congestion.	DRIVER: Transportation Workstream COLLABORATOR: Greening Workstream Taxi Associations BUSCOR
3. Improve pedestrian linkages.	3A. PEDESTRIAN LINKAGES Construct functional pedestrian links between public transport nodes and all 2010 venues, park and ride facilities and shuttle stops.	DRIVER: Transportation Workstream Traffic & Transportation Department COLLABORATOR: Greening Workstream City Beautification Workstream Parks Department Stadium Workstream Training Venue Workstream Fan Park organisers

D6 BIODIVERSITY STRATEGY

The Biodiversity Strategy aims to ensure that local biodiversity and heritage is promoted and enhanced through the hosting of the 2010 World Cup in Nelspruit. 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 turnkey projects that will create opportunities for MLM to showcase its biodiversity and heritage assets to visitors as a key eco-tourism experience and local tourism marketing initiative.

In the introductory section of this report, it was explained that Nelspruit will be a key launch pad for 2010 visitors to see attractions such as Kruger National Park, the Lowveld National Botanical Garden, Gods Window, Graskop and Blyde River Canyon. This points to a key opportunity for the MLM to promote itself as an eco-tourism destination given its proximity to important biodiversity and heritage attractions in South Africa.

D6.1 Achievements to Date / Work in Progress

ACHIEVEMENTS:

★ The Mbombela Stadium plan includes 17 hectares of landscaped area. Much of this will be indigenous landscaping. The need for indigenous landscaping has been included in the ROD for the Mbombela Stadium.

WORK IN PROGRESS:

➔ The Record of Decision issued in response to the Environmental Impact Assessment (EIA) process undertaken for the Mbombela Stadium required the on-site and off –site rehabilitation of wetlands in the Stadium Precinct as a mitigation measure in response the stadium construction.

➔ The ROD also required alien plant clearing to be undertaken in the Stadium Precinct.

➔ A substantial budget has been allocated for landscaping around the Mbombela Stadium.

➔ The MLM have identified a need for the provision of rural parks that could act as viewing sites for 2010

World Cup matches.

➔ The MLM have also identified the need for the development of a concept document / guideline to be used to inform the Host City beautification programme in terms of habitat recreation, local indigenous plant species use, irrigation efficiency, etc.

D6.2 Strategy Table

TARGETS	ACTIONS	ACTION DRIVER & COLLABORATORS
1. Comply with ROD conditions pertaining to biodiversity protection and rehabilitation at Mbombela Stadium.	1A. WETLAND REHABILITATION: MBOMBELA STADIUM PRECINCT Prepare project plan for wetland rehabilitation / offset in Stadium Precinct. Implement plan.	DRIVER: Stadium Workstream Stadium Project Team COLLABORATORS: Greening Workstream Parks Department Stormwater Management Department Environmental Management Department SANBI
	1B. ALIEN PLANT CLEARING PROGRAMME: MBOMBELA STADIUM PRECINCT Establish an alien plant clearing programme for the Stadium Precinct and associated wetland areas.	DRIVER: Greening Workstream COLLABORATORS: Stadium operator Parks Department
2. Enhance and promote local biodiversity through green landscaping. Green urban and rural parks that will service 2010 as viewing venues	2A. GREEN LANDSCAPING GUIDELINES Develop Green Landscaping Guidelines for the City Beautification Workstream and all municipal landscaping projects. To include guide for hard and soft landscaped areas, habitat recreation / restoration, water efficiency, energy efficiency, indigenous planting palettes. Advocate / promote implementation of Green Landscaping Guidelines in private developments and domestic gardens (2010 and beyond).	DRIVER: Greening Workstream COLLABORATORS: Beautification Workstream Parks Department Environmental Management Department SANBI
	2B. PARK DEVELOPMENT Upgrade local park facilities, and develop a new park at Phumlani Township to act as a public viewing area. Collaborate with Beautification Workstream / Parks to ensure that all urban and rural parks built / upgraded to service 2010 are "greened" (avoid destruction of natural habitats, implement green landscaping guidelines, implementation of environmentally sustainable toilets and water systems etc).	DRIVER: Greening Workstream COLLABORATORS: Beautification Workstream Parks Department Environmental Management Department SANBI
3. Promote local biodiversity experiences / eco-tourism facilities for 2010 visitors and beyond.	3A. GREENING LOWVELD NATIONAL BOTANICAL GARDENS Prepare a project plan for "greening" of the Lowveld National Botanic Gardens and / or Crocodile River in the Gardens and upstream toward the Mbombela Stadium as a biodiversity / eco-tourism facility / area for 2010 (and beyond) in Nelspruit. To include any alien plant clearing required, upgrading of visitor facilities (where appropriate). Where possible iconic greening interventions (solar water heating etc) should be implemented.	DRIVER: Greening Workstream COLLABORATOR: SANBI Beautification Workstream Tourism Workstream

D7 AWARENESS RAISING AND REPORTING STRATEGY

The 2010 Greening Programme introduces a range of environment friendly approaches and technologies that assist in creating more sustainable infrastructure and operational systems, and minimise local, regional and global environmental impacts. There is thus a key opportunity to promote the use of these "best practice" approaches to a broader audience as part of the 2010 profiling campaign. Over and above this, 2010 represents an opportunity to promote general environmental awareness and the need for all individuals to take action. In addition to this, the achievements of the 2010 Greening Programme need to be reported on. This will be done through an environmental awareness-raising campaign linked to the 2010 Communications Workstream.

In terms of the Framework for the National 2010 Greening Programme, appropriate levels of reporting on progress and achievements will be required from all Host Cities to DEAT and LOC, which will be used to report nationally on 2010 Greening achievements in South Africa.

D7.1 Achievements to Date / Work in Progress

WORK IN PROGRESS:

- The MLM will be developing a Communications Strategy for the 2010 World Cup. Issues of environmental protection, green technologies, the benefits of recycling etc will be integrated with this strategy to ensure that local awareness is raised of the need for and benefits of environmental sustainability – but also to profile the positive achievements made by the MLM and other stakeholders in greening the 2010 World Cup in Mbombela.

- According to the ROD for Mbombela Stadium, a community awareness programme must be incorporated into the development strategy that will focus on educating the community to alter their current land use strategies in order to improve the local wetland systems and prevent further degradation.

D7.2 Strategy Table

TARGETS	ACTIONS	ACTION DRIVER & COLLABORATORS
1. Raise awareness and promote the adoption of eco-friendly technologies, systems & approaches before and through the 2010 World Cup.	1A. GREENING WEBPAGE Establish and maintain a Greening Programme information centre within the MLM 2010 webpage and SA 2010 World Cup website.	DRIVER: Greening Workstream COLLABORATOR: Communications Workstream
	1B. GREENING PROMOTIONAL MATERIALS & DISPLAYS Establish information displays and boards for all iconic greening interventions made at stadia, fan fest areas, and within tourist routes / corridors of excellence, transport hubs. Develop greening short messages for big screens at public viewing areas / Fan park. Develop a Greening short film.	DRIVER: Greening Workstream COLLABORATOR: Communications Workstream
2. Report on greening achievements.	2A. PRESS RELEASES Maintain positive presence in local and national press through regular submission of articles on what is being done / achieved.	DRIVER: Greening Workstream COLLABORATOR: Communications Workstream

D8 MONITORING AND EVALUATION STRATEGY

Owing to the fact that event greening is an emerging field internationally, the Mbombela 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 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 and Reporting 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 MLM to develop greening approaches to other events hosted in its area of jurisdiction, and can be shared with other South African cities, FIFA and the international community.

TARGETS	ACTIONS	ACTION DRIVER & COLLABORATORS
1. Monitor implementation of the Greening Programme during 2010 and for 6 months post event.	1A. MONITORING Collect and collate information on what is achieved in the Greening Programme throughout the build up to and hosting of the event.	DRIVER: Greening Workstream
2. Critically evaluate the successes and failures of the Greening Programme and make assessment information available to others.	2A. EVALUATION AND REPORTING 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.	DRIVER: Greening Workstream

D9 CROSS CUTTING PROJECTS / RESOURCES

D9.1 Environmental Management Systems for 2010 Venues

The Minimum Environmental Standards for greening the 2010 event in South Africa have included the need for an Environmental Management System (EMS) to be developed for each official 2010 venue (stadia, Fan Parks and Training Venues). These EMS's are intended mainly to guide the operational phases of these venues, and the closure phase where appropriate. The EMS's cut across the targets and objectives of the various Greening Strategies contained in this plan, and need to address the following key areas:

- Maximising efficiency of energy use, and maintenance of energy infrastructure (including renewable energy sources).
- Maximising efficiency of water use, and maintenance of water infrastructure. This includes ongoing prevention of water pollution.
- Maximising efficiency and sustainability of waste collection, handling and disposal.
- Minimising negative impacts on natural resources, ecosystems and biodiversity.
- Minimising local and global environmental impacts through an environment-focused procurement policy.
- Ensuring maximum financial sustainability.

The EMS's need to include the following components at a minimum:

- Energy Management Operational Plan
- Water Use Management Operational Plan
- Stormwater Management Plan

- Waste Management Operational Plan
- Landscape Development and Management Plan
- Procurement Policy

D9.2 Greening Programme Resources / Capacity

Given the fact that most of the Greening projects contained within this Plan will need to be developed, owned and driven by a dedicated Greening Workstream or other resource within the Mbombela Municipality, it is believed to be absolutely necessary to ensure that additional human resources are obtained to perform or assist with this function (as currently there is one person allocated part-time to this task within the Municipality). It is therefore recommended that a dedicated Programme Manager / Co-ordinator is appointed to manage the various projects and ensure their delivery.

SECTION E: PROJECTS AND FINANCIAL PLAN

This section contains estimated budgets needed to implement the various Projects identified in the Greening Strategies contained within this Plan, and contains project briefs for each of the projects that needs to be contracted out of the MLM.

It should be noted that NOT ALL PROJECTS CONTAINED WITHIN THIS PLAN MUST NECESSARILY BE IMPLEMENTED. It is anticipated that the Greening Workstream Leader will liaise with municipal Treasury Department and other line functions in order to prioritise which projects can be accommodated financially and within human resource constraints in time for 2010. The option exists to implement the remaining projects post-2010 as legacy Greening projects for the municipality.

E1 CROSS-CUTTING PROJECTS

These projects cross-cut a range of the Greening Strategies outlined in this Plan.

A. Environmental Management Systems for 2010 Venues

1. Project Description / Overview
This project responds to the national Minimum Environmental Standards for Greening as developed by the LOC and involves the establishment of an Environmental Management System (EMS) at each of the official FIFA venues which ensure that the environmental sustainability and efficiency concepts of the Greening Programme are implemented. This includes the Mbombela Stadium, the Training Venues and Fan Park.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires close collaboration with the Infrastructure Workstream and Stadium Design and Construction teams, Training Venue Workstream, Fan Park organisers and operators of these venues.

3. Scope of Work
- Undertake energy, water and waste baseline assessments of all official 2010 Venues.
- Develop an EMS for each of the official 2010 Venues that address the operational management phase of the facilities (and the construction, set up and / or closure where appropriate). These must include Energy Management Operational Plans, Water Management Operational Plans, Sustainable Waste Management Operational Plans. The EMS's must address maximised environmental sustainability and efficiency, as well as appropriate types and levels of monitoring / metering and measurement systems.

4. Outputs
- Baseline water, energy and waste reports for each 2010 Venue.
- EMS for each 2010 Venue containing Water, Waste and Energy Management Operational Plans.

5. Skills / Resources Required for Completion of the Work
Architect (with "Green Buildings" experience)
Electrical Engineer
Mechanical Engineer

Integrated Waste Management Specialist
Landscape Architect / Irrigation Specialist

6. Key Partnering Agencies
DBSA
DANIDA
DEAT
CEF
SESSA
Green Building Council of SA

7. Timeframe
Start: First Quarter 2009, completed by mid-2009.

8. Budget
OPERATING BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL OPEX BUDGET
	2009	2010	2011	
Baseline assessments - Mbombela Stadium	R 60 000	R 0	R 0	R 60 000
Baseline assessments - Training Venues	R 60 000	R 0	R 0	R 60 000
Baseline assessments - Fan Park	R 30 000	R 0	R 0	R 30 000
EMS - Mbombela Stadium	R 350 000	R 0	R 0	R 350 000
EMS - Training Venues	R 300 000	R 0	R 0	R 300 000
EMS - Fan Park	R 100 000	R 0	R 0	R 100 000
TOTAL	R 900 000	R 0	R 0	R 900 000

B. Greening Programme Co-ordinator

It is proposed that a person is appointed on an 18 month contract to co-ordinate the Greening Programme within the MLM. The selected individual needs to have the following skills:

- Project Management
- Experience in working in a local municipal environment
- Experience in environmental-related projects

It is suggested that remuneration come from operating budget and be structured as follows:

2009: Monthly remuneration R25,000 / month X 12 months = R300,000
2010: Monthly remuneration R26750 / month X 6 months = R160,500

TOTAL COST: R460,500

E2 CLIMATE IMPACT MANAGEMENT

Project 1A: Carbon Footprint Calculation

1. Project Description / Overview
This project responds to the Greening Programme target of measuring and reporting on Climate Impact Management achievements. The national Greening 2010 Programme co-ordinated by DEAT and the LOC has a process in which the national carbon footprint of the 2010 World Cup is being calculated. Nelspruit's footprint should be included in this, and this information should be available back to the Mbombela Municipality such that they have their local carbon footprint for the 2010 World Cup.

The Greening Workstream should lead the process of providing the necessary information to DEAT and their appointed specialists for the carbon footprint calculation. Should this process not be able to provide a detailed carbon footprint for Mbombela Local Municipality, a separate project may be undertaken for this.

Project 1B: Reporting on Carbon Footprint Reductions and Best Practice Guidebook

1. Project Description / Overview
This project responds to the Greening Programme target of minimising or avoiding carbon emissions wherever possible and measuring and reporting on Climate Impact Management achievements.

The purpose of the project is to account for the carbon sequestration potential of trees planted in City Beautification Programme, in the stadium, practice stadia and Fan Park landscaping. It involves a review of the design and specifications of Mbombela Stadium in respect of achievements in embodied carbon emissions reductions through the materials used and construction methods employed. It should also account for carbon savings from sustainable transport systems implemented to service the event and sustainable waste management systems implemented. The project should calculate the carbon emissions reductions and sequestration achieved as a % of total estimated carbon footprint.

The outcomes of this review should be used to produce a best practice carbon emissions minimisation guide for use in the training venue upgrades, but also for future Municipal construction tenders / contracts (thus positive legacy impact).

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires close collaboration with the Infrastructure Workstream and Stadium Design and Construction teams, Fan Park organisers and operators. Also requires close collaboration with:

- Solid waste management
- Transportation Workstream
- Parks Department
- Beautification Workstream

3. Scope of Work

- Consult with city Beautification Workstream, Parks and Environment Department to determine the number of trees and shrubs planted in preparation for 2010.
- Estimate the carbon sequestration potential of the identified carbon sequestration and carbon offset projects.
- Review Stadium Bill of Quantities and calculate embodied carbon emissions associated with the materials used.
- Review stadium design to identify good / best practices that have reduced the installed energy capacity and carbon footprint of the stadium (e.g. natural ventilation and lighting).
- Review engineering design and specification to determine the energy footprint of the stadium and associated carbon footprint (this can be calculated on the basis of energy use anticipated during the 2010 World Cup events).
- Through consultation with the professional design team, evaluate how / whether the installed energy capacity of the stadium and / or actual energy footprint of the stadium has been reduced through climate / environmentally sensitive design and specifications of the stadium – and quantify this (in terms of actual energy saved and how this has reduced the carbon footprint).
- Evaluate the construction process to determine examples of energy efficient practice and how this might reduce the carbon footprint / climate impacts of this process.
- Calculate and produce a report on the carbon footprint reductions / sequestration potential of the above. The project should calculate the carbon emissions reductions and sequestration achieved as a % of total estimated carbon footprint. The report should point to best practices and good approaches used.
- Produce a best practice guidebook on design, construction and energy specifications for reducing impacts on global climate – that uses positive examples from the above review – and that can be used in municipal construction contracts and for the training venues.

4. Outputs

- Review Report
- Best Practice Guidebook

5. Skills / Resources Required for Completion of the Work

- Architect (with “Green Buildings” experience)
- Electrical Engineer
- Carbon Footprinting Specialist

6. Key Partnering Agencies
DBSA
DANIDA
DEAT
Green Building Council of SA

7. Timeframe
Start: July 2009 – December 2009.

8. Budget
OPERATING BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL OPEX BUDGET
	2009	2010	2011	
Collection of information and consultation	R 50 000.00	R 0	R 0	R 50 000
Stadium design review	R 20 000	R 0	R 0	R 20 000
C footprint calculations	R 80 000	R 0	R 0	R 80 000
Production of Review Report	R 60 000	R 0	R 0	R 60 000
Production of Guidebook	R 150 000	R 0	R 0	R 150 000
TOTAL	R 360 000	R 0	R 0	R 360 000

Project 2A: Lobby for Low Emissions Public Transport Fleet

Project Description / Overview
This project responds to the Greening Programme target of minimising or avoiding carbon emissions wherever possible. It involves the Greening Workstream lobbying the relevant Transportation unit or workstream to ensure that public transport vehicles servicing 2010 (and beyond) meet appropriate emissions standards (Euro II) and have maximum fuel economy.

This is an internal function that can be completed by municipal staff members and does not require the appointment of specialist consultants.

Timeframe
Start immediately and lobby through to completion of purchase of transport fleet.

Project 3A: Support / Maximise Tree Planting

Project Description / Overview
This project responds to the Greening Programme target of offsetting the unavoidable carbon emissions associated with hosting the event to the maximum extent possible. It involves the Greening Workstream providing a support function to the City Beautification Workstream in terms of maximising the number of trees planted in the Municipal Area. These trees will perform an important role in sequestering carbon.

It should be noted here that the Greening Workstream can also assist by seeking funding for tree planting from agencies such as Department of Water Affairs and Forestry's "Million Trees Programme", which is providing funding for tree planting initiatives in many of the 2010 Host Cities. Food and Trees for Africa may also be approached to assist with finding tree planting sponsors.

Timeframe
Start immediately – to June 2010.

Project 3B: Carbon Sequestration Project Development

Project Description / Overview
This project responds to the Greening Programme target of offsetting the unavoidable carbon emissions associated with hosting the event to the maximum extent possible. It involves the Greening Workstream working with the Parks Department and local SANBI office to identify any deforested areas, or areas around the stadium, that could be viable sites for establishing / re-establishing forests through mass tree planting. These

areas will be key carbon sequestration zones within the municipal area that can assist in offsetting the carbon footprint.

The Greening Workstream should lead the process of developing a project Plan and taking this out to potential project funders. The budget for the project will be dependant mainly on the size and location of the identified Tree Planting area.

It is suggested that the project development process is also assisted by possible implementation partners such as Wildlands Conservation Trust's Trees for Life / Treepreneurs Programmes, such that job creation and other social objectives associated with such projects can be maximised.

Timeframe
First quarter 2009.

Project 3C: Carbon Emissions Reductions Project Development

1. Project Description / Overview
This project responds to the Greening Programme target of offsetting the unavoidable carbon emissions associated with hosting the event to the maximum extent possible. It involves a process of identifying, evaluating and prioritising potential carbon offset projects that can be implemented in the municipal area. The purpose is to achieve maximum possible offsets locally, with maximum associated social and economic benefits.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires close collaboration with Environmental / Sustainability Department and all other line departments with potential energy savings projects (traffic & transportation, housing, buildings management, architectural services, wastewater management, solid waste management etc).

3. Scope of Work
The development of the carbon offset project must include a process to identify potential carbon emissions reductions projects that will offset the carbon emissions associate with the 2010 World Cup in Nelspruit, and evaluation and prioritization of these. It is a requirement that all potential projects identified and evaluated be located within the Mbombela Municipal Area. It is <u>not</u> a requirement that projects identified / prioritized must qualify as Certifiable Emissions Reductions projects (i.e. by the UNFCCC), or as Verifiable Emissions Reductions projects; however, the specialist consultant will be expected to advise on the qualification criteria, benefits and options of selecting projects that can be certified or verified for emissions trading.

It is intended that the project identification and development process will include:

- Development of a set of criteria for evaluating potential carbon sequestration and offset projects, to include:
    - Maximum carbon emissions mitigation (to meet and / or exceed the emissions associated with hosting the 2010 World Cup locally);
    - Maximum long term and financial sustainability;
    - Project precedents for achieving carbon accreditation for trading of any excess carbon credits (over and above those needed to offset the 2010 emissions) - CER's or VER's depending on which is considered appropriate;
    - Affordability and potential interest from funders / donors;
    - Social benefits from the project, including job creation;
    - Location of project within municipality.

- Consultation with relevant municipal service departments in the identification of appropriate and implementable local carbon sequestration and offset projects (possibly including biogas projects, energy efficiency initiatives etc).

- Consultation with relevant carbon trading authorities / market players to determine likelihood of obtaining CER certification from the UNFCCC and / or establishing VER's that can be traded on the open market (note that this may be one mechanism for funding the project if carbon credits over and above those required to offset the 2010 carbon footprint can be achieved).

- Development of a project Plan for the preferred and most viable carbon offset project. This plan must be ready for taking to potential project funders.

4. Outputs
- Project evaluation criteria
- Workshop / meeting reports
- Project identification and prioritisation report
- Project Plan (for preferred project)

5. Skills / Resources Required for Completion of the Work
- Specialist expertise in carbon emissions reductions project identification and planning, preferably with some experience in carbon credits registration and trading

6. Key Partnering Agencies
DANIDA
DEAT
World Bank
FirstClimate

7. Timeframe
Start: First Quarter 2009, completed by end-2009.

8. Budget
CAPITAL BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL CAPEX BUDGET
	2009	2010	2011	
Development of project selectio criteria	R 40 000	R 0	R 0	R 40 000
Workshops / meetings with municipal sectors	R 60 000	R 0	R 0	R 60 000
Consultation with UNFCC etc	R 15 000	R 0	R 0	R 15 000
Project prioritisation process & report	R 60 000	R 0	R 0	R 60 000
Project Business Plan	R 150 000	R 0	R 0	R 150 000
TOTAL	R 325 000	R 0	R 0	R 325 000

E3 ENERGY EFFICIENCY

Projects 1A and 2B: Maximise Energy Efficiency and Renewable Energy at 2010 Venues & City Beautification Routes

Project Description / Overview
This project responds to the Greening Programme target of maximising and demonstrating energy use reductions through efficiency, but also through the use of renewable energy where possible. The Greening Workstream needs to ensure that the Training Venue, Infrastructure Workstream and the Fan Park organisers include the need for maximum energy efficiency in the terms of reference, tender and contract documents for the Training Venues, Fan Park, Park & Rides and Intermodal Transport Facilities, as well as along city beautification routes. In addition to this, contractors and consultants need to investigate the possibilities for use of renewable energy sources (PV cells, solar water heating, wind energy etc) as a more sustainable supply source where possible and feasible. CFL's should be installed to replace standard street lighting along the approximately 20km of city beautification routes.

The Greening Workstream needs to ensure that appropriate energy efficiency and renewable energy criteria are included in the tender documentation and contracts of all parties involved in the development, design, upgrading, establishment and operation of these facilities. The Greening Workstream may also assist by lobbying Eskom and the CEF for funding for CFL's as a DSM initiative in the MLM.

Project 1B: Promote Energy Efficiency in Private Sector

Project Description / Overview
This project responds to the Greening Programme target of maximising and demonstrating energy use reductions. The Greening Workstream needs to ensure that the Municipal Electricity Dept / Infrastructure Workstream and the Fan Park organisers include the need for energy efficiency in all agreements with private service providers (caterers, hospitality, media and broadcasting) that will be operating at FIFA venues during the

2010 World Cup. In addition, the tourism and hospitality sector should be lobbied to maximise their energy savings.

Project 2A: Renewable Energy at Mbombela Stadium

1. Project Description / Overview
This project responds to the Greening Programme target of implementing at least one renewable energy project. The Greening Workstream needs to lobby for the implementation of the heat recycling initiatives planned for the airconditioning plant, and ensure that the energy savings achieved are monitored and reported on. The Greening Workstream may also provide support to the Infrastructure Workstream in assisting in applying and lobbying for additional capital funding from non-municipal sources should this be required for the implementation of the initiative.

Investigations need to be made into the best use of the R240,000 provided by the Gelsenkirchen Municipality for solar initiatives at the Mbombela Stadium. It has been suggested that MLM should provide R260,000 to create a sum of R500,000 for solar initiatives at the stadium. Options include solar pumps for pitch and landscape irrigation, solar walkway lighting and solar water heating.

2. Key Partnering Agencies
Eskom
CEF
DBSA

Project 3A: Renewable Energy Legacy Project

1. Project Description / Overview
This project responds to the Greening Programme target of facilitating investigations in to the implementation of a renewable energy scheme in Nelspruit as a legacy project within the Greening Programme. Appropriate specialists would need to be hired to undertake feasibility investigations into potential hydroelectric schemes, wind energy, landfill gas to energy, biogas (etc) projects in MLM area; prioritise feasible projects and identify funding sources for implementation.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires collaboration with a range of municipal service departments.

3. Scope of Work
- Scope potential existing / refurbishable / possible new renewable energy projects in the Mbombela Municipal Area
- Evaluate feasibility and cost of implementation of priority projects
- Identify and canvass potential project funders
- Prepare Plan for selected priority project

4. Outputs
- Project Scoping Report
- Plan

5. Skills / Resources Required for Completion of the Work
Electrical Engineer
Mechanical Engineer
Carbon Trading and Registration Expert / Specialist

6. Key Partnering Agencies
DWAF
DANIDA
World Bank
DBSA
GEF

7. Timeframe
July 2009 – June 2010.

8. Budget
CAPITAL BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL CAPEX BUDGET
	2009	2010	2011	
Scope potential renewable energy projects	R 80 000	R 0	R 0	R 80 000
Test feasibility and cost of priority projects	R 60 000	R 0	R 0	R 60 000
ID and canvas potential funders	R 0	R 30 000	R 0	R 30 000
Prepare business plan for preferred project	R 0	R 150 000	R 0	R 150 000
TOTAL	R 140 000	R 180 000	R 0	R 320 000

E4 WATER CONSERVATION AND MANAGEMENT

Project 1A: Maximise Water Use Efficiency at 2010 Venues

Project Description / Overview
This project responds to the Greening Programme target of minimising water use at event hosting venues – including efficiency of use, rainwater harvesting and grey water recycling. The Greening Workstream needs to ensure that the Training Venue, Infrastructure Workstream and the Fan Park organisers include the need for maximum water use minimisation in the terms of reference, tender and contract documents for the Training Venues, Fan Park, Park & Rides and Intermodal Transport Facilities. In addition to this, contractors and consultants need to investigate the possibilities for use of harvested rainwater and recycled grey water as a more sustainable supply source where possible and feasible.

The Greening Workstream needs to ensure that appropriate water conservation and management criteria are included in the tender documentation and contracts of all parties involved in the development, design, upgrading, establishment and operation of these facilities.

Project 1B: Implement Water Capture / Recycling at Mbombela Stadium

1. Project Description / Overview
This project responds to the Greening Programme target of minimising water use at the stadium. The Greening Workstream should perform a key support role to the stadium and infrastructure workstreams in facilitating the implementation of planned water capture and recycling initiatives at Mbombela Stadium.

2. Budget
A budget of R400,000 is allocated from capital budget for this project.

Project 2A: Stormwater Management Plan: Mbombela Stadium Precinct

1. Project Description / Overview
This project responds to the Greening Programme target of avoiding increased flood peaks and pollution of natural water resources as a result of the construction and operation of the Mbombela Stadium and Precinct.

2. Project Drivers and Collaborators
Stadium / Infrastructure Workstream to own and drive the project with assistance from the Greening Workstream. Key collaborators will be the Stadium Operators, Municipal Stormwater Management Department.

3. Scope of Work
- Review Record of Decision for Mbombela Stadium to define the requirements of the Stormwater Management Plan.
- Develop a Stormwater Management Plan for the construction and operational phases of the development that ensure that flood peaks are not exacerbated and that local water resources are protected.
- Inclusion of Plan in TOR for Stadium Operator.
- Implementation of Stormwater Management Plan.

4. Outputs
Stormwater Management Plan.
Relevant component of Stadium Operator TOR.

5. Skills / Resources Required for Completion of the Work
Stormwater Engineer

6. Key Partnering Agencies
DWAF
DBSA

7. Timeframe
February to October 2009.

8. Budget
CAPITAL BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL CAPEX BUDGET
	2009	2010	2011	
Review ROD and consult with DWAF	R 8 000	R 0	R 0	R 8 000
Development of Stormwater Management Plan	R 60 000	R 0	R 0	R 60 000
Inputs to Stadium Operators TOR	R 8 000	R 0	R 0	R 8 000
Implementation of Plan	R 250 000	R 0	R 0	R 250 000
TOTAL	R 326 000	R 0	R 0	R 326 000

E5 SUSTAINABLE WASTE MANAGEMENT

Project 1A: Sustainable Waste Management Strategy for 2010

1. Project Description / Overview
This project responds to the Greening Programme target of establishing a waste management system that minimises waste at source, includes waste separation and recycling, and creates sustainable jobs. This project aims to develop an integrated waste management system that can form part of the municipal waste management system for the 2010 World Cup.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires close collaboration with the municipal solid waste department, stadium workstream, infrastructure workstream, Fan Park workstream and operators, training venues workstream and operators. Implementation of the Plan will need to be done either by the municipality's own waste management department or selected waste contractor / s.

3. Scope of Work
- Utilise waste baseline assessments conducted under Project A of "Cross-Cutting Projects" to estimate waste volumes and types from the various 2010 venues.
- Undertake estimation of increase in waste volumes (and types) from tourism and hospitality facilities within the area.
- Evaluate current infrastructural capacity to handle the anticipated waste volumes, and determine the capacity of existing recycling / waste separation facilities within the area.
- Determine and cost additional infrastructure and facilities required.
- Develop protocol for waste minimisation at the official 2010 venues.
- Develop adapted protocol / guideline for tourism and hospitality sector to use in minimising their waste outputs.
- Develop a Sustainable Waste Management Strategy including the above information.
- Implement strategy.

4. Outputs
Waste minimisation protocol for 2010 Venues

Waste minimisation guideline for tourism and hospitality sectors

Sustainable Waste Management Strategy.

Refurbished or installed waste management infrastructure.

5. Skills / Resources Required for Completion of the Work
Integrated Waste Management Specialist
Waste Systems Expert

6. Key Partnering Agencies
FIFA Sponsors (food and beverage)
Recycling agencies
DPLG
DEAT
DBSA

7. Timeframe
February 2009 to July 2010.

8. Budget
CAPITAL BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL CAPEX BUDGET
	2009	2010	2011	
Collection of waste information	R 25 000	R 0	R 0	R 25 000
Evaluation of infrastructure capacity	R 30 000	R 0	R 0	R 30 000
Costing of additional infrastructure and systems required	R 40 000	R 0	R 0	R 40 000
Develop waste minimisation protocols	R 200 000	R 0	R 0	R 200 000
Develop waste management strategy	R 200 000	R 0	R 0	R 200 000
Implementation (includes R4,330,000 trucks, sweeper)	R 0	R 5 830 000	R 0	R 5 830 000
TOTAL	R 495 000	R 5 830 000	R 0	R 6 325 000

Project 2A: Construction Waste Recycling

Project Description / Overview
This project responds to the Greening Programme target of minimising waste and maximising recycling during all municipal infrastructure development and refurbishment. The Greening Workstream needs to ensure that the Training Venue, Infrastructure Workstream and the Fan Park organisers include the need for waste minimisation and recycling in the construction / demolition terms of reference, tender and contract documents for the Training Venues, Fan Park, Park & Rides and Intermodal Transport Facilities.

The Greening Workstream needs to ensure that appropriate sustainable waste management criteria are included in the tender documentation and contracts of all parties involved in the development, design, upgrading, establishment and operation of these facilities.

Project 3A: Waste Avoidance / Minimisation Legacy Project

1. Project Description / Overview
This project responds to the Greening Programme target of facilitating investigations in to the implementation of waste reduction / minimisation schemes in Nelspruit as a legacy project within the Greening Programme. Appropriate specialists would need to be hired to undertake feasibility investigations into potential waste avoidance or minimisation projects that would significantly minimise the amount of waste landfilled over time in MLM area (e.g. sludge composting, waste re-use); prioritise feasible projects and identify funding sources for implementation.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires collaboration with a range of municipal service departments.

3. Scope of Work
- Scope potential waste minimisation or avoidance projects in the Mbombela Municipal Area
- Evaluate feasibility and cost of implementation of priority projects
- Identify and canvass potential project funders
- Prepare Plan for selected priority project

4. Outputs
- Project Scoping Report
- Plan

5. Skills / Resources Required for Completion of the Work
Waste Systems Expert

6. Key Partnering Agencies
DBSA

7. Timeframe
July 2009 – June 2010.

8. Budget
CAPITAL BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL CAPEX BUDGET
	2009	2010	2011	
Scope potential waste avoidance projects	R 80 000	R 0	R 0	R 80 000
Test feasibility and cost of priority projects	R 60 000	R 0	R 0	R 60 000
ID and canvas potential funders	R 0	R 30 000	R 0	R 30 000
Prepare business plan for preferred project	R 0	R 150 000	R 0	R 150 000
TOTAL	R 140 000	R 180 000	R 0	R 320 000

E6 SUSTAINABLE TRANSPORT

Project 1A: Park and Ride

Project Description / Overview
This project responds to the Greening Programme target of minimising traffic congestion and parking requirements at all event venues for 2010 and beyond by promoting the use of park and ride systems.

The Greening Workstream needs to provide a support function to the Infrastructure Workstream to ensure that this is implemented such that it meets the required greening targets and objectives.

Project 2A: Public Transport Facilities

Project Description / Overview
This project responds to the Greening Programme target of increasing the quality, accessibility and maximising the levels of use of public transport for 2010 and beyond. The Greening Workstream can play a key role in supporting the Infrastructure Workstream in the implementation of the planned public transport networks and facilities that can service 2010.

Project 2B: Public Transport Operators

Project Description / Overview
This project responds to the Greening Programme target of increasing the quality, accessibility and maximising the levels of use of public transport for 2010 and beyond. The Greening Workstream can play a key role in supporting the Infrastructure Workstream in the required negotiations with public transport operators in respect of reducing traffic congestion around 2010 venues, and promoting the use of this form of transport during the 2010 event.

Project 3A: Pedestrian Linkages

Project Description / Overview
This project responds to the Greening Programme target of improving pedestrian linkages between public transport nodes and 2010 venues. The Greening Workstream can play a supporting role to the Infrastructure Workstream in the implementation of this.

E7 BIODIVERSITY

Project 1A: Wetland Rehabilitation: Mbombela Stadium Precinct

1. Project Description / Overview
This project responds to the Greening Programme target of complying with the ROD conditions pertaining to biodiversity protection and environmental rehabilitation at Mbombela Stadium. The project involves the

development and implementation of a plan for reinstatement of a wetland lost during the construction of Mbombela Stadium, as specified in the ROD.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires collaboration with Infrastructure Workstream, stadium landscapers.

3. Scope of Work
- Review ROD and consult with DWAF and Department of Environment to determine specification for the project.
- Develop wetland rehabilitation plan.
- Implement plan.

4. Outputs
- Wetland rehabilitation plan
- Rehabilitated wetland

5. Skills / Resources Required for Completion of the Work
Wetland specialist
Specialist landscaper / environmental rehabilitation specialist

6. Key Partnering Agencies
Department of Environment
DWAF

7. Timeframe
July 2009 – June 2010.

8. Budget
CAPITAL BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL CAPEX BUDGET
	2009	2010	2011	
Determine specification for the project	R 10 000	R 0	R 0	R 10 000
Develop rehabilitation plan	R 40 000	R 0	R 0	R 40 000
Implement plan	R 100 000	R 100 000	R 0	R 200 000
TOTAL	R 150 000	R 100 000	R 0	R 250 000

Project 1B: Alien Plant Clearing Programme: Mbombela Stadium Precinct

1. Project Description / Overview
This project responds to the Greening Programme target of complying with the ROD conditions pertaining to biodiversity protection and environmental rehabilitation at Mbombela Stadium. The project involves the establishment of an alien plant clearing programme for the Stadium Precinct and associated wetland areas.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires collaboration with Parks Department, who may need to pick up the implementation of the programme beyond 2010 (or stadium operator).

3. Scope of Work
- Develop alien plant clearing plan.
- Implement plan.

4. Skills / Resources Required for Completion of the Work
Specialist landscaper / environmental rehabilitation specialist

6. Key Partnering Agencies
Department of Environment
DWAF (who may be able to contribute through the Working for Water Programme)
WESSA
SANBI

7. Timeframe
July 2009 - ongoing.

8. Budget
OPERATING BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL CAPEX BUDGET
	2009	2010	2011	
Develop programme	R 15 000	R 0	R 0	R 15 000
Implement programme	R 30 000	R 30 000	R 30 000	R 90 000
TOTAL	R 45 000	R 30 000	R 30 000	R 105 000

Project 2A: Green Landscaping Guidelines

1. Project Description / Overview
This project responds to the Greening Programme target of enhancing and promoting local biodiversity through green landscaping. The Green landscaping guidelines are intended to inform the various city beautification and landscaping projects that will be undertaken for 2010 and beyond. The guidelines should also be made available to the public to promote a more environmentally friendly form of landscaping in the MLM as a positive legacy initiative. The green landscaping guidelines should cover hard and soft landscapes, and address broadly the environmental issues that can be associated with landscaping (water and energy efficiency, use of environmentally friendly plants and materials etc).

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires collaboration with Parks Department.

3. Skills / Resources Required for Completion of the Work
Specialist landscaper / environmental rehabilitation specialist

6. Key Partnering Agencies
Department of Environment
DWAF
WESSA
SANBI

7. Timeframe
First quarter 2009.

8. Budget
OPERATING BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL CAPEX BUDGET
	2009	2010	2011	
Develop guideline	R 200 000	R 0	R 0	R 200 000
Print and distribute to public	R 200 000	R 0	R 0	R 200 000
TOTAL	R 400 000	R 0	R 0	R 400 000

Project 2B: Green Park Development

1. Project Description / Overview
This project responds to the Greening Programme target of enhancing and promoting local biodiversity through green landscaping and park development. The project involves upgrading local park facilities and development of a new park at Phumlani Township. The parks should be designed to act as public viewing areas during 2010, and should be upgraded / constructed as “green” facilities (avoid destruction of natural habitats, implement green landscaping guidelines, installation of environmentally friendly irrigation and sanitation facilities etc).

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires collaboration with Parks Department.

3. Scope of Work
- Identify Parks needing upgrades and develop an inventory of upgrades / refurbishment needed.
- Cost the inventory.

- Identify the area for the new park at Phumlani Township and cost the construction of the park.
- Design new park.
- Procure materials for upgrades and park construction.
- Implement park upgrades and construction.

4. Skills / Resources Required for Completion of the Work
Most of the tasks can be undertaken in-house. Implementation will most likely need to be contracted out. Specialist landscaper / environmental rehabilitation specialist

6. Key Partnering Agencies
Department of Environment
DWAF
WESSA
SANBI

7. Timeframe
February 2009 to April 2010.

8. Budget
CAPITAL BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL CAPEX BUDGET
	2009	2010	2011	
Parks upgrades	R 0	R 200 000	R 0	R 200 000
Construction of park at Phumlani	R 200 000	R 200 000	R 0	R 400 000
TOTAL	R 200 000	R 400 000	R 0	R 600 000

Project 3A: Greening Lowveld National Botanical Garden

1. Project Description / Overview
This project responds to the Greening Programme target of promoting local biodiversity experiences / eco tourism facilities for 2010 visitors and beyond. The project requires the direct collaboration and buy-in of SANBI who run the Botanical Garden. The project is to involve greening of the visitor facilities at the garden.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires collaboration with Parks Department, Beautification and Tourism Workstreams.

3. Scope of Work
- Establish project scope with SANBI
- Cost proposed interventions and procure equipment / materials
- Implement

4. Key Partnering Agencies
SANBI
Mpumalanga Department of Tourism

5. Timeframe
Mid 2009 to March 2010

6. Budget
CAPITAL BUDGET will need to be used for this Project.

TASKS (from scope of work)	Budget			TOTAL CAPEX BUDGET
	2009	2010	2011	
Greening of visitor facilities	R 100 000	R 100 000	R 0	R 200 000
TOTAL	R 100 000	R 100 000	R 0	R 200 000

E8 AWARENESS RAISING AND REPORTING

Project 1A: Greening Webpage

1. Project Description / Overview
This project responds to the Greening Programme target of raising awareness and promoting the adoption of eco-friendly technologies, systems and approaches before and throughout the 2010 World Cup. The project involves the establishment and maintenance of a Greening webpage on the MLM website which is used to report on the progress with the programme, make available and accessible the various guidelines and greening information that the MLM wishes the private sector to adopt / use, and promote green behaviour and business in association with the 2010 World Cup. Work should be completed in-house.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires collaboration with Communications Workstream.

3. Timeframe
To be completed by April 2009.

Project 1B: Greening Promotional Materials and Displays

1. Project Description / Overview
This project responds to the Greening Programme target of raising awareness and promoting the adoption of eco-friendly technologies, systems and approaches before and throughout the 2010 World Cup. The project involves the development of information displays, signage, a greening poster, brochure and banners, billboards and soccer balls etc which can be used at a range of venues to promote awareness around greening issues and the greening programme. It also involves the development of a Greening short film and greening messages which can be displayed on the big screens at public viewing venues and the Fan Park.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires collaboration with Communications Workstream.

3. Skills / Resources Required for Completion of the Work
Media and advertising specialists

4. Timeframe
Start February 2009 and complete June 2010

5. Budget
OPERATING BUDGET will need to be used for this Project. A bulk sum of R500,000 has been allocated to this project.

Project 2A: Press Releases

1. Project Description / Overview
This project responds to the Greening Programme target of reporting on greening achievements. The Greening Workstream is required to draft regular press releases that report on the Greening Programme achievements, advertise the availability of the various greening guidelines produced, and generally promote greener behaviour before and during the event.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project. Requires collaboration with Communications Workstream.

E9 MONITORING AND EVALUATION

Project 1A: Monitoring

1. Project Description / Overview
This project responds to the Greening Programme target of monitoring the implementation of the Greening Programme during 2010 and for 6 months post-event. A specialist environmentalist should be appointed to conduct this function. The process must include collection of information on energy and water use (and savings)

at the various venues, the management of waste, the successes and failures of the projects implemented under this programme and the public (and fans) perceptions of the greening programme and its achievements.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project.

3. Timeframe
June 2010 – December 2010.

4. Budget
R100,000 – OPERATING budget.

Project 2A: Evaluation and Reporting

1. Project Description / Overview
This project responds to the Greening Programme target of critically evaluating the successes and failures of the Greening programme. An assessment report should be produced which is published at an appropriate level of public accessibility.

2. Project Drivers and Collaborators
Greening Workstream to own and drive project.

3. Skills / Resources Required for Completion of the Work
Suggest using the same specialist appointed for project 1A.

4. Timeframe
January – March 2011

5. Budget
OPERATING BUDGET will need to be used for this Project. R150,000.

E10 FINANCIAL PLAN

The following notes apply to the financial plan:

MLM Budget:	Funds that need to be allocated from the MLM budget in the absence of alternative funding sources
2009, 2010, 2011:	Denote calendar years in which budget should be allocated
Non-MLM Budget:	Only funds that have already been allocated from other sources have been reflected

Yellow shading denotes work to be completed in-house with no additional budget required for hiring of specialists or purchase of materials.

Strategy	Project	MLM Budget			Non-MLM	Total	Total
		2009	2010	2011	Budget	Capex	Opex
Cross-Cutting	A - EMS for 2010 Venues	R 900 000	R 0	R 0	R 0	R 0	R 900 000
	B - Greening Programme Manager	R 300 000	R 160 500	R 0	R 0	R 0	R 460 500
	Sub-total	R 1 200 000	R 160 500	R 0	R 0	*R 0*	*R 1 360 500*
Climate Impact Management	1A - Carbon Footprint	R 0	R 0	R 0	R 0	R 0	R 0
	1B - Reporting on Carbon Footprint reductions & Best Practice Guidebook	R 360 000	R 0	R 0	R 0	R 0	R 360 000
	2A - Lobby for Low Emissions PT Fleet	R 0	R 0	R 0	R 0	R 0	R 0
	3A - Support / Maximise Tree Planting	R 0	R 0	R 0	R 0	R 0	R 0
	3B - Carbon Sequestration Project Development	R 0	R 0	R 0	R 0	R 0	R 0
	3C - Carbon Offset / Emissions Reductions Project Development	R 325 000	R 0	R 0	R 0	R 325 000	R 0
	Sub-total	R 685 000	R 0	R 0	R 0	*R 325 000*	*R 360 000*
Energy Efficiency	1A - Maximise Energy Efficiency at 2010 Venues	R 0	R 0	R 0	R 0	R 0	R 0
	1B - Promote Energy Efficiency in the Private Sector	R 0	R 0	R 0	R 0	R 0	R 0
	2A - Renewable Energy at Mbombela Stadium	R 260 000	R 0	R 0	R 240 000	R 500 000	R 0
	2B - Renewable Energy Interventions at 2010 Venues	R 0	R 0	R 0	R 0	R 0	R 0
	3A - Renewable Energy Legacy Project	R 140 000	R 180 000	R 0	R 0	R 320 000	R 0
	Sub-total	R 400 000	R 180 000	R 0	R 240 000	*R 820 000*	*R 0*
Water Conservation & Management	1A - Maximise Water Use Efficiency at 2010	R 0	R 0	R 0	R 0	R 0	R 0
	1B - Water Capture & Recycling at Mbombela	R 400 000	R 0	R 0	R 0	R 400 000	R 0
	2A - Stormwater Management Plan: Mbombela Stadium Precinct	R 326 000	R 0	R 0	R 0	R 326 000	R 0
	Sub-total	R 726 000	R 0	R 0	R 0	*R 726 000*	*R 0*
Sustainable Waste Management	1A - Sustainable Waste ManagementStrategy and System for 2010	495 000	5 830 000	0	0	R 6 325 000	R 0
	1B - Construction Waste Recycling	0	0	0	0	R 0	R 0
	1C - Waste Avoidance / Minimisation Legacy Project	140 000	180 000	0	0	R 320 000	R 0
	Sub-total	R 635 000	R 6 010 000	R 0	R 0	*R 6 645 000*	*R 0*
Sustainable Transport	1A - Park and Ride	0	0	0	0	R 0	R 0
	2A - Public Transport Facilities	0	0	0	0	R 0	R 0
	2B - Public Transport Operators	0	0	0	0	R 0	R 0
	3A - Pedestrian Linkages	0	0	0	0	R 0	R 0
	Sub-total	R 0	R 0	R 0	R 0	*R 0*	*R 0*
Biodiversity	1A - Wetland Rehabilitation: Mbombela Stadium Precinct	150 000	100 000	0	0	R 250 000	R 0
	1B - Alien Plant Clearing Programme: Mbombela Stadium Precinct	45 000	30 000	30 000	0	R 0	R 105 000
	2A - Green Landscaping Guidelines	400 000	0	0	0	R 0	R 400 000
	2B - Green Park Development	200 000	400 000	0	0	R 600 000	R 0
	3A - Greening Lowveld National Botanical	100 000	100 000	0	0	R 200 000	R 0
	Sub-total	R 895 000	R 630 000	R 30 000	R 0	*R 1 050 000*	*R 505 000*
Awareness Raising & Reporting	1A - Greening Webpage	0	0	0	0	R 0	R 0
	1B - Greening Promotional Materials & Displays	250 000	250 000	0	0	R 0	R 500 000
	2A - Press Releases	0	0	0	0	R 0	R 0
	Sub-total	R 250 000	R 250 000	R 0	R 0	*R 0*	*R 500 000*
Monitoring & Evaluation	1A - Monitoring	0	100 000	0	0	R 0	R 100 000
	2A - Evaluation	0	0	150 000	0	0	150 000
	Sub-total	R 0	R 100 000	R 150 000	R 0	*R 0*	*R 250 000*
TOTALS		*R 4 791 000*	*R 7 330 500*	*R 180 000*	*R 240 000*	*R 9 566 000*	*R 2 975 500*
TOTAL MUNICIPAL BUDGET REQUIRED							*R 12 541 500*

SECTION F: IMPLEMENTATION PLAN

F1 IMPLEMENTATION AGENTS AND PARTNERS

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

F1.1 Greening Workstream

The MLM 2010 Greening Workstream will play the lead role in driving the implementation of this Plan. For many of the projects, the Greening Workstream is the project DRIVER – indicating leadership of the project but not necessarily the conducting of the required work – which may be subcontracted to appropriate specialists or undertaken by other 2010 Workstreams or municipal departments. In some of the projects the Greening Workstream will be a COLLABORATOR – in such instances the work will be lead by another Sector but the Greening Workstream will input into the project where appropriate and monitor performance and outputs.

F1.2 Stadium Workstream and Project Team

The Stadium Workstream is lead by a municipal official and the Project Team comprises the Professional Consortium appointed to design and build the new Mbombela Stadium, and to plan the surrounding Stadium Precinct.

The Stadium Workstream and Project Team have an important role to play in investigating, designing and implementing appropriate greening technologies at the stadium and in the Stadium Precinct. These parties also have a role to play in evaluating and reporting-back on their achievements and compliance with the Greening Programme approaches and strategies.

F1.3 MLM Service Departments

There are a number of **municipal departments** that will play a role in the planning, design and servicing of the 2010 World Cup events in the MLM. 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. 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 2010 Greening Plan to implement or assist with greening actions and communications specific to the 2010 World Cup events, and / or to implement the various actions and guidelines developed by the Greening Plan in a broader arena and in the longer term.

F1.4 National Government

The **Department of Environment Affairs and Tourism (DEAT**) is the key national department with a role to play in the MLM 2010 Greening Programme. DEAT will be expected to take leadership in all interventions that require a national-scale directive. This will include, for example, the following:

- offsetting the balance of carbon emissions associated with hosting the 2010 World Cup in Nelspruit that cannot be offset by local initiatives,
- procurement of funding and expertise to assist host cities in achieving their greening targets where possible and within financial means,
- 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 wetland rehabilitation associated with the Mbombela Stadium Precinct).

The **Department of Water Affairs and Forestry (DWAF)** is the custodian of South Africa's water and forestry resources. It is primarily responsible for the formulation and implementation of policy governing these two sectors. As such DWAF is a key roleplayer at a national level in managing water consumption, preventing the pollution of surface and groundwater resources and supporting reforestation and tree planting initiatives. At a local level and relating to 2010, DWAF has allocated funding support to city beautification (tree planting programme).

F1.5 Provincial Government

The Mpumalanga Provincial **Department of Economic Development, Environment and Tourism (DEDET)** in collaboration with DEAT and other relevant stakeholders may assist and support 2010 World Cup host city 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 DEDET is also the mandated custodian of biodiversity, and can assist in planning and designing interventions in the Biodiversity Strategy, as well as tourism greening approaches.

The **Mpumalanga Tourism and Parks Authority** can play a role by promoting environmentally responsible tourism, and in particular promoting the observance of the Greening aims and targets that form part of the MLM 2010 Greening Programme.

F1.6 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 interventions[3]
- 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.

Many **hospitality, catering and tourism / leisure businesses** based in the MLM area stand to benefit substantially from the hosting of the 2010 World Cup in Nelspruit. However, unless these businesses are direct suppliers to the 2010 event under the control of the event organisers, there is limited means to force them to assist in achieving the city's greening targets, but the MLM may wish to consider incentivising positive greening action.

[3] 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.

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.

F1.7 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:

SANBI – The South African National Biodiversity Institute is mandated to promote the sustainable use, conservation, appreciation and enjoyment of South Africa's exceptionally rich biodiversity, for the benefit of all people. SANBI owns and operates the Nelspruit Botanical Garden and thus have a significant presence in the Nelspruit area. SANBI thus has a role to play in identifying, designing and collaborating in the implementation of the Biodiversity Strategy of this 2010 Greening Plan.

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.

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 Mbombela 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.

F2 GREENING WORK TEAM

A Greening Work Team should be established to co-ordinate the Actions required for implementation of the Greening Plan. The whole or part of the Work Team may meet regularly where co-ordination is required between different Projects, but if this is not required then relevant members of the team may be called to meetings to discuss specific issues, problems or make decisions. This Work Team is the key mechanism for implementation the required COLLABORATION during implementation of this Plan.

The Work Team will be chaired by the 2010 Greening Workstream Co-ordinator. The membership of the Work Team is proposed as follows:

CHAIR: 2010 Greening Co-ordinator: Khethiwe Malaza

2010 Co-ordinator: Differ Mogale

Municipal Workstreams / Departments

- Stadium Workstream
- Practice Stadium Workstream
- Fan Park Organisers / Workstream
- City Beautification Workstream

- Tourism Workstream
- Municipal Electricity
- Municipal Water Services / Wastewater Management
- Municipal Waste Management
- Planning and Development
- Traffic and Transportation
- Environmental Management / Sustainability Department
- Communications Department
- Skills Development Workstream
- Contracts Department

Non-Municipal Roleplayers:

- Stadium Consultant Team
- SANBI
- WESSA
- IZWA
- Birdlife SA / International
- Eskom
- Mpumalanga Department of Economic Development, Environment and Tourism
- Mpumalanga Tourism and Parks Authority
- Recycling Companies
- Nelspruit Chamber of Commerce
- Specialists

F3 POSSIBLE SUPPORT/FUNDING SOURCES FOR GREENING ACTIVITIES

All Host Cities are expected to provide their own funding for the preparations associated with hosting the 2010 World Cup. It is therefore expected that the MLM will allocate a funding stream to the 2010 Greening Workstream and the implementation of this Plan (or priorities contained within it).

Although this is the case, all Host Cities are finding this financial commitment a heavy one, and it is therefore imperative that supplementary funding is obtained from other agencies wherever possible.

This section provides a brief description of potential funding and partnering agencies that can be canvassed for greening project funding and technical support under the Greening Programme. Agencies already mentioned in Section E1 as possible implementation partners may be approached to provide funding to Programme initiatives.

F3.1 DEAT and National Treasury

DEAT does not have funds available to give to municipalities for the implementation of their 2010 Greening Programmes. However, they do have access to a range of funding streams that could be used to contract consultants and implementation agents for key projects. In addition, DEAT may facilitate funding allocations from:

* Working for Water (alien plant clearing funding),
* Working for Wetlands (wetland rehabilitation programmes), and
* The National Poverty Alleviation Fund.

National treasury also source of Neighbourhood Improvement Grant Fund (NIGF). This fund is mainly directed at beautification of previously disadvantaged areas and additional funds can be sourced within existing NIGF awards that National Treasury has issued to the Municipality.

F3.2 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.

F3.3 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.

F3.4 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 and UNEP, which liaises directly with DEAT. Potential GEF funding for the MLM's 2010 Greening Projects would best be sought through the assistance / representation of DEAT, and currently seem to be directed towards the transport sector.

F3.5 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 technical support in biodiversity-related studies or research for the Greening Programme. SANBI would be a valuable partner to the MLM on design and implementation of the Biodiversity Strategy projects.

F3.6 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.

F3.7 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.

F3.8 Eskom

Eskom has a Demand Side Management (DSM) Programme that includes a specific component for 2010 Host Cities. Eskom offers a "package of incentives" to official 2010 venues that is effectively a subsidised rate on energy saving / renewable energy devices such as solar water heaters and energy saving light bulbs. Eskom could be approached for subsidisation of energy saving initiatives at all 2010 venues through their Demand-Side Management Programme (DSM), but may also be approached to contribute technically to the development and roll out of energy saving initiatives for 2010 and beyond.

SECTION G REFERENCES / BIBLIOGRAPHY

G1 DOCUMENTS CONSULTED

Econ Analysis, 2006. **Pre-feasibility CDM Assessment for New Green Point Stadium.** Western Cape Provincial Government Report.

Katzel, CT. 2007. Event Greening: Is this concept providing a serious platform for sustainability best practice? Unpublished Masters Thesis.

Oko-Institut e.V. 2003. **Green Goal: Environmental Goals for the 2006 FIFA World Cup**. Oko-Institut e.V. Report.

Oko-Institut e.V. 2004. **Green Goal™ - the environmental concept for the 2006 FIFA World Cup™.** Organising Committee of the 2006 FIFA World Cup, Frankfurt.

G2 USEFUL WEBSITES

Collect-a-Can Website. www.collectacan.co.za
DANIDA Website. www.um.dk
DBSA Website. www.dbsa.org/
DEAT Website. www.environment.gov.za
Eskom Website. www.eskom.co.za
FEDHASA Website. www.fedhasa.co.za
FIFA Website. www.fifa.com
GEF Website. www.gefweb.org
IZWA Website. www.izwa.org.za
Mpumalanga Provincial Government Website. www.Mpumulanga.gov.za
Mpumalanga Tourism and Parks Website. www.goMpumulanga.com
Mondi Recycling Website. www.mpsa.co.za/services/
Nampak Website. www.nampak.co.za
Reclam Website. www.reclam.co.za
SANBI Website. www.sanbi.org.za
TGCSA Website. www.tourismgrading.co.za
UNDP Website. www.undp.org
WESSA Website. www.wessa.org.za
World Bank Website. www.worldbank.org/
WWF-SA Website. www.panda.org.za