

**Msunduzi Municipality
Environmental Services Plan –
Identification of Social Criteria**

**Report Prepared for
Department of Environmental Affairs, Department
of Agriculture, Environmental Affairs and Rural
Development, and Msunduzi Municipality**

Report No: 376998/DESP-SC

March 2010



Msunduzi Municipality Environmental Services Plan – Identification of Social Criteria

**Report Prepared for
Department of Environmental Affairs, Department
of Agriculture, Environmental Affairs and Rural
Development, and Msunduzi Municipality**

SRK Project Number: 376998

SRK Consulting

**Suite 201 Sinodale Centre
345 Burger Street
Pietermaritzburg, 3201
South Africa**

**P O Box 460
Pietermaritzburg
3200**

South Africa

Tel: (033) 345-6311

Fax: (033) 345-6403

pemanuel@srk.co.za

March 2010

Compiled by:

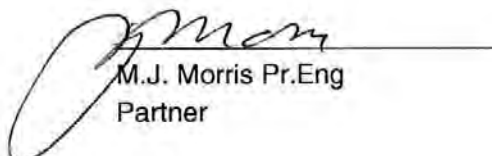


**K. Allan
Environmental Scientist**

Reviewed by:



**P. Emanuel Pr.Sci.Nat
Environmental Scientist**



**M.J. Morris Pr.Eng
Partner**

Table of Contents

1	Introduction	1
1.1	Understanding of the Terms of Reference.....	2
1.2	Structure of the Report.....	3
2	Methodology	4
2.1	Collection and review of information.....	4
2.2	Identification of design criteria for inclusion of priority areas for social use	4
3	Literature Review	5
3.1	EESP 2001 and EESP 2003	5
3.2	GOSP3	6
3.3	uMhlathuze Crime Prevention Study.....	6
4	Design criteria for identification of priority social use / values	8
4.1	Function.....	8
4.2	Usage Frequency.....	8
4.3	Social Services	8
4.4	Visual Absorption Capacity (VAC).....	9
4.5	Economic Value	10
4.6	Heritage Criteria.....	11
4.7	Creation of a consolidated Social Significance Ranking	11
5	Conclusions and Way Forward	13
6	References	14
	Appendices	15
	Appendix 1 Cultural Heritage Map.....	15

List of Tables

Table 1.1: Outline of this Report.....	3
Table 4.1: Function Ranking Table	8
Table 4.2: Use Ranking Table.....	8
Table 4.3: Social Services Ranking Table.....	9
Table 4.4: VAC Ranking Table.....	10
Table 4.5: Economic Ranking Table	11
Table 4.6: Cultural Ranking Table.....	11
Table 4.7: Consolidated Ranking Matrix.....	12

List of Figures

Figure 1.1: Phases of the Msunduzi EMF	2
Figure 4.1: Slope VAC categories (sourced from GOSP3).....	9
Figure 4.2: Vegetation Height VAC categories (sourced from GOSP3).....	9
Figure 4.3: Visual Pattern of Landscape Character VAC categories (sourced from GOSP3)	10

22 January 2010

376998

Msunduzi Environmental Management Framework Environmental Services Plan (ESP) – Identification of Social Criteria

1 Introduction

The Msunduzi Municipality (Msunduzi), in partnership with the national Department of Environmental Affairs (DEA), previously the Department of Environmental Affairs and Tourism (DEAT) and the KwaZulu-Natal Department of Agriculture and Environmental Affairs and Rural Development (DAEA&RD) previously the Department of Agriculture and Environmental Affairs (DAEA), has recognised that to support sustainable social, economic and environmental development within the Municipality, the adoption and implementation of an appropriate policy to inform development planning and approval is required. To address these requirements, the preparation of an Environmental Management Framework (EMF) is being undertaken by SRK Consulting (SRK). The Msunduzi EMF includes a Status Quo Analysis, Strategic Environmental Assessment (SEA), an Environmental Services Plan (ESP) previously referred to as the Municipal Open Space System (MOSS), a Strategic Environmental Management Plan (SEMP) and GIS based Spatial Decision Support Tool (SDST) for Msunduzi. The Msunduzi EMF consists of 3 Phases as indicated in Figure 1.1. The ESP forms part of Phase three of the greater Msunduzi EMF project as illustrated in Figure 1.1.

G:\Proj\376998_MSunduzi EMF_EMAN_ISO\7) Reports\ESP\376998_SRK_Social_100226.doc



Partners AN Birtles, JCJ Boshoff, MJ Braune, JM Brown, CD Dalglish, JR Dixon, DM Duthe, R Gardiner, T Hart, GC Howell, WC Joughin, PR Labrum, DJ Mahlangu, RRW McNeill, HAC Meintjes, BJ Middleton, MJ Morris, GP Murray, WA Naismith, GP Nel, VS Reddy, PN Rosewarne, PE Schmidt, PJ Shepherd, VM Simposya, AA Smithen, PJ Terbrugge, KM Uderstadt, DJ Verrier, HG Waldeck, ML Wertz, A Wood

Directors AJ Barrett, JR Dixon, DM Duthe, DJ Mahlangu, BJ Middleton, VS Reddy, PE Schmidt, PJ Terbrugge

Associates AH Bracken, BM Engelsman, DJD Gibson, SA McDonald, M Ristic, JJ Slabbert, CF Stoen, D Visser, MD Wanless

Consultants AC Burger, BSc (Hons); IS Cameron-Clarke, PrSci Nat, MSc; JAC Cowan, PrSci Nat, BSc (Hons); JH de Beer, PrSci Nat, MSc; GA Jones, PrEng, PhD; TR Stacey, PrEng, DSc; OKH Steffen, PrEng, PhD; RJ Stuart, PrTech Eng, GDE; DW Warwick, PrSci Nat, BSc (Hons)



Cape Town	+27 (0) 21 659 3060
Durban	+27 (0) 31 279 1200
East London	+27 (0) 43 748 6292
Johannesburg	+27 (0) 11 441 1111
Kimberley	+27 (0) 53 861 5798
Pietermaritzburg	+27 (0) 33 345 6311
Port Elizabeth	+27 (0) 41 509 4800
Pretoria	+27 (0) 12 361 9821
Rustenburg	+27 (0) 14 594 1280

Dar-es-Salaam	+25 (5) 22 260 1881
Harare	+263 (4) 49 6182

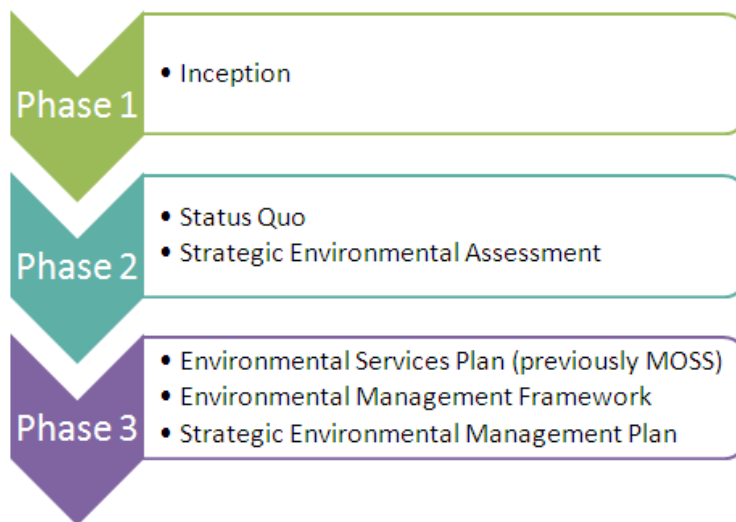


Figure 1.1: Phases of the Msunduzi EMF

This report constitutes the product of the ESP component of the Greater Msunduzi EMF project, specifically the Social Criteria as discussed further in 1.1 below. The MOSS component falls within Phase three of the greater Msunduzi EMF project. Phase one, the inception phase included consultation to finalise the approach to the remainder of the study. Phase two included the status quo where the current state of the environment was described and mapped and the SEA phase which consolidated the findings of the status quo phase and used these to develop a sustainability framework. Phase one and two of the project have been completed and phase three is underway. Phase three includes the preparation of the SEMP, EMF and ESP, this Report.

1.1 Understanding of the Terms of Reference

The process of identifying open space areas from a social and cultural perspective requires extensive public involvement. It was agreed that this level of public involvement fell outside of the scope of the ESP and that the public involvement required would be undertaken during the implementation of the ESP. Therefore in order to include social criteria in the identification of areas for inclusion in the ESP two strategies were identified. It was agreed that existing Msunduzi open space areas would be included in the ESP and that social criteria for prioritisation and identification of open space areas would be developed. Existing open spaces were included in the mapping produced as part of the INR Report, ESP - Areas required to maintain ecosystem goods and services. In order to identify social criteria SRK undertook the following tasks:

- Review the approach to developing Durban and other MOSS's;
- Review literature on social use values for open space & define criteria for inclusion of these area for uses such as education, scenic/aesthetic, recreational use, trails, buffers (i.e. between industrial and residential areas) etc;
- Define design criteria for identification of priority social use / values (incl. developed parks) areas as part of the implementation of the Msunduzi MOSS

This report therefore includes a literature review and a set of social criteria that may be used by the municipality to rate areas identified in terms of the INR Report and identify additional areas required to meet social open space.

1.2 Structure of the Report

Table 1.1 below provides an outline of this Report.

Table 1.1: Outline of this Report

Section	Title	Content
Executive Summary	Executive Summary	A short summary highlighting the key points of this report.
Section 1	Introduction	An introduction to this report, outlining the differences between a MOSS, ESP and Public Open Space. This section explains the role of a MOSS within the Msunduzi EMF.
Section 2	Methodology	Outlines the methodology used within this report.
Section 3	Literature Review	Review of other relevant MOSS's and studies to include: the eThekweni Environmental Services Management Plan 2001 and 2003; Gauteng Open Space Project: Phase 3 and the uMhlathuze Crime Prevention Study.
Section 4	Design criteria for identification of priority social use / values	Details social criteria that could be used within the Msunduzi Municipality to prioritise or include areas in the ESP
Section 5	Conclusions and Way forward	Outlines recommended actions for implementation of the ESP.

2 Methodology

This section outlines the methodology used to identify Social Criteria, and describes the collection of information and identification of the design criteria.

2.1 Collection and review of information

To inform the identification of social criteria other MOSS's and studies were reviewed. The three case studies reviewed include:

- eThekweni Environmental Services Management Plan 2001 and 2003 versions (EESP 2001 and EESP 2003 respectively),
- Gauteng Open Space Project Phase 3 (GOSP3) and
- uMhlathuze Municipality Crime prevention Plan focussing on use of Open Spaces.

Each of these studies aimed to identify open spaces within each of their respective municipalities; however slightly different methodologies were used in each. Section 3 of this report identifies key concepts from each in terms of relevance to the Msunduzi ESP.

2.2 Identification of design criteria for inclusion of priority areas for social use

From the studies reviewed, some key concepts were identified in terms of criteria that may be used in the determination of important social factors in open space planning. While ecology plays an important role in the identification of important open space areas, there are also social (aesthetic, cultural, recreational and historical) factors that need to be included in the design criteria for an open space plan.

Areas that hold a significant value for a community need to be conserved, particularly in urban areas where open space is limited. The identification of social criteria took into account the need to include areas that may not hold significant ecological value, but provide communities with space to socialise and 'escape' the urban lifestyle. The social criteria also considered other values such as areas of cultural or historical significance to specific communities.

The identification of these areas is inherently difficult. Any attempt to rank or quantify what is essentially a qualitative subject is difficult and needs to be undertaken in a sensitive manner. Each community has its own assumptions and values associated with open spaces, making the identification of the most important areas highly subjective. The design criteria identified in Section 0 of this report therefore aimed to reduce the subjective nature of the ranking of open space.

3 Literature Review

As described above a literature review was carried out to inform the identification of social criteria to refine the Msunduzi ESP during implementation. The three case studies reviewed were as follows:

- EESP 2001 and EESP 2003,
- GOSP3, and
- uMhlathuze Municipality Crime prevention Plan.

These are discussed further in the sections below.

3.1 EESP 2001 and EESP 2003

The EESP 2001 was based upon the Durban Metropolitan Open Space System (D'MOSS) of 1989 and the D'MOSS Framework Plan of 1999. The purpose of the EESP 2001 was to inform land use planning and allow for the sustainable use of the environmental services within the municipality.

While the EESP 2001 includes “*brown areas*” such as: *shopping malls, plazas and other paved concrete areas* in the definition of open spaces the EESP 2001 criteria for inclusion focus on identifying areas of ecological function. The EESP 2001 did however consider the human element but looked more at the impact of human actions on natural process. As a result a number of actions were identified that affect social use values of the open space areas, these include:

- The control of harvesting of the natural products supplied in an open space (medicine, firewood and other natural resources);
- Ensuring the scenic attractiveness of the open space;
- The control of disturbance to the fauna and flora in the open space through the actions of humans;
- Promote the development of compatible land use next to an open space; and
- Promote managed access to the open space.

The EESP 2003 is an update of the 2001 study and documents changes as a result of subsequent studies conducted by external consultants. The focus of the study remained the same, namely on the conservation of ecosystem goods and services but the criteria for the identification of open space were amended to include consideration of the use of open spaces. The criteria also considered aspects that would make the site undesirable for development such as slope and flooding. However the criteria for inclusion remained biophysical and no purely social criteria were considered other than consideration of existing open spaces.

3.2 GOSP3

The Gauteng Open Space Project Phase 3 (GOSP3) was initiated to refine the GOSP Phase 2 which identified, mapped and assessed the significance of open spaces in terms of their ecological, heritage and social values. The GOSP3 aimed to refine these values. The GOSP3 did not include a public involvement process and as such it was noted that the application of the social and cultural criteria may require refinement in light of the different values communities place on open spaces.

Open spaces to be set aside due to their cultural heritage value were identified through consolidation of existing datasets much like the Cultural Heritage Specialist Study undertaken in the Status Quo Phase of the Greater Msunduzi EMF project. Social criteria identified were as follows:

- Function – use of the area for its intended purpose such as recreation, education and providing a sense of place or visual relief;
- Frequency of use;
- Potential aesthetic value;
- Social Services – much like function;
- Economic Value – relating to ecosystem goods and services such as water, food and raw materials;
- Visual Absorption Capacity – the extent to which the open space mitigated aesthetic impacts of development;

These criteria were used to identify areas of social use value. The GOSP3 noted that while a site may have no ecological value it may have a high social use value. Alternatively however areas of ecological importance are not excluded from also providing social use values however the management of these areas is important to ensure that use of the site for social needs does not compromise the ecological integrity of the site.

3.3 uMhlathuze Crime Prevention Study

As part of the city planning for uMhlathuze open spaces were set aside for social amenity and to preserve ecological function. It was however recognised that the extensive open space system was contributing to crime. As such SRK was appointed to undertake an audit of zoned open spaces and categorise the areas in relation to their crime potential in terms of their ecological, social and development value.

The potential for crime was determined through an on-site inspection of the open space. A questionnaire was completed in order to determine if the open space concerned was detrimental to the area. Some of the aspects on site that were investigated included, but were not limited to:

- Vegetation on site – height of the vegetation, visibility of the vegetation, potential for hiding places for criminals, types of vegetation, alien species and land use on site;
- Fencing of the site – the height of the fences, visible disturbances of the fences, condition of the fences and ownership of the fence;

- Equipment on site – what playground equipment is on site, the condition of any equipment and litter collection on site; and
- Visibility – how visible the site is from the outside and how the visibility in the site is.

Crime potential really relates the use of open spaces for uses other than those intended. Such use of the site compromises intended use and may be reason to transform open spaces. However the use of an area for crime is a management issue and appropriate management will be critical to ensure that a site is not inappropriately used.

4 Design criteria for identification of priority social use / values

The case studies above were used to inform the development of criteria, as detailed below, for the identification and prioritisation of open spaces within Msunduzi. These criteria should however be used together with extensive public consultation in order to refine the Draft ESP.

4.1 Function

This criterion gauges the extent to which a site is used or is intended for use as a public open space. Activities therefore that would be expected on the site would include:

- Recreation such as walking, picnicking, playing sport (formal and informal) or dog walking;
- Education such as information centres;
- Providing a sense of place and visual relief such as sites of urban greening or buffers between industrial or commercial areas and residential areas

The following ranking scale is recommended:

Table 4.1: Function Ranking Table

Areas used and maintained for intended public amenity	6
Areas used but not maintained for intended public amenity	3
Areas not intended or used for public amenity	1
Used for purposes other than that intended such as crime	0

4.2 Usage Frequency

Usage frequency refers to how frequently a public amenity area is used by a community. The ratings used are:

Table 4.2: Use Ranking Table

Areas used daily for the intended public amenity	6
Areas used weekly for the intended public amenity	5
Areas used monthly for the intended public amenity	4
Area used quarterly for the intended public amenity	3
Area is used annually for the intended public amenity	2
Area is not used for the intended public amenity	1

4.3 Social Services

Social Services offered by an area may include the following:

- Visual relief;
- Recreation;

- Education;
- Noise reduction; and
- Cultural importance

The ranking of the open space in terms of social services should be determined by the number of services it offers, as follows:

Table 4.3: Social Services Ranking Table

Provides 4 or 5 of the identified services	6
Provides 2 or 3 of the identified services	5
Provides 1 of the identified services	4
Provides none of the identified services	1

4.4 Visual Absorption Capacity (VAC)

VAC is the measure of the landscape’s ability to accept / absorb changes to the landscape through development. The more a landscape can “hide” a developmental change, the higher the VAC.

For the purpose of ranking the VAC of an open space, the VAC for the area should be determined through investigations into slope, visual pattern (landscape texture) and vegetation height. The application of these aspects of VAC is described further below.

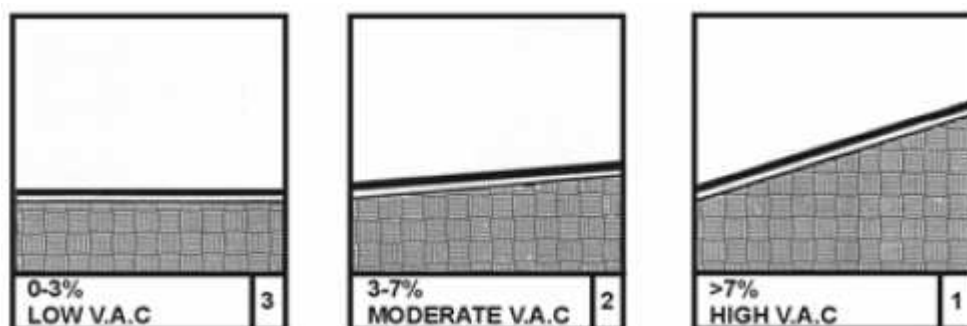


Figure 4.1: Slope VAC categories (sourced from GOSP3)

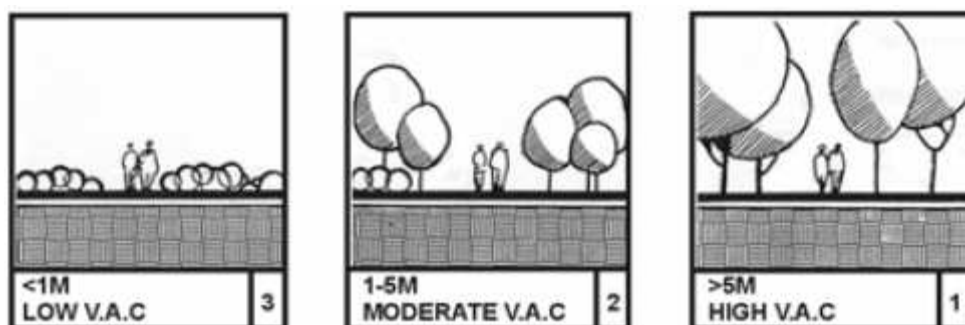


Figure 4.2: Vegetation Height VAC categories (sourced from GOSP3)

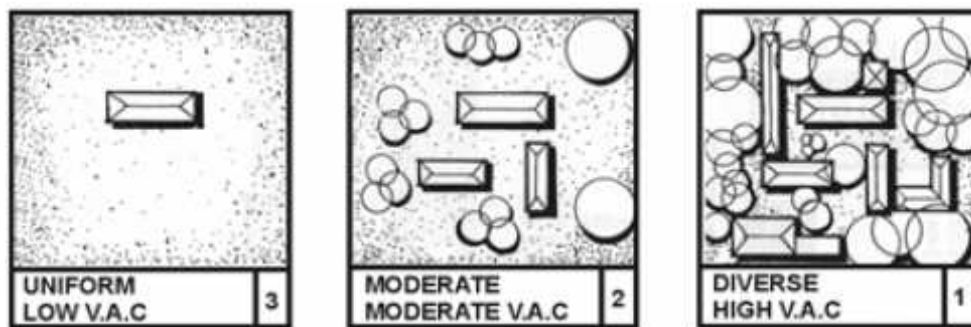


Figure 4.3: Visual Pattern of Landscape Character VAC categories (sourced from GOSP3)

For each aspect of VAC a ranking obtained, these rankings are then summed to provide a consolidated VAC ranking. Table 4.4 illustrates how the rankings should be summed to obtain a consolidated VAC ranking.

Table 4.4: VAC Ranking Table

Slope	0-3%	3-7%	>7
	3	2	1
Vegetation Height	<1m	1-5m	>5m
	3	2	1
Visual Pattern	Uniform	Moderate	Diverse
	3	2	1
Total	9-7	6-4	3-1
Ranking	4	5	6
Significance	High	Medium	Low

4.5 Economic Value

The economic value of an open space refers to the provision of the following items with economic value:

- Raw materials
- Water supply
- Food or opportunities for food production
- Medicinal plants
- Increased property values
- Income generating recreation i.e Duzi Canoes Marathon

As for social services the ranking of areas in terms of economic value should be based on the number of items it provides as follows:

Table 4.5: Economic Ranking Table

Provides 3 or more of the identified services	6
Provides 2 of the identified services	5
Provides 1 of the identified services	4
Provides none of the identified services	1

4.6 Heritage Criteria

As part of the Status Quo Phase of the greater Msunduzi EMF project zones and points of cultural heritage importance were identified from existing datasets and through consultation with cultural heritage specialists. The map of cultural heritage zones and points is included at Appendix 2. Inclusion of these points and zones into the ESP was discussed and it was decided not to include these areas for the following reasons:

- The majority of cultural heritage sites in Msunduzi are privately owned buildings and therefore do not constitute open space; and
- By definition the map is an Environmental Services Management Plan and the areas proposed as cultural heritage zones do not offer ecosystem goods and services.

Cultural heritage resources are however critically important in terms of the identification of areas of high social use value. As such it is suggested that the following ranking of cultural significance be used to identify areas of high social use value:

Table 4.6: Cultural Ranking Table

Open spaces within Cultural Heritage Zones	2
Opens spaces in which Cultural Heritage points exist	1.5
Opens spaces with no Cultural Heritage significance	1

As illustrated below the total value of a site is doubled if it falls within a cultural heritage zone and is increased by 50% if it has a cultural heritage point on the site. While the ranking numbers are low due to the calculation used Cultural Heritage has a significant impact on the overall significance rating.

4.7 Creation of a consolidated Social Significance Ranking

If sites are to be compared with one another in order to rank sites in terms of their social importance, it is critical that a consolidated ranking be determined. How the different components are summed determines the extent to which each of the component influence the consolidated total. It is therefore proposed that the sum of Function and Frequency be multiplied with the sum of Social Services VAC and Economic Services. This total should then be multiplied by the ranking for cultural significance as illustrated further in Table 4.7.

Table 4.7: Consolidated Ranking Matrix

Criteria	Significance			
	High	Medium	Low	None
Function	6 Areas used and maintained for intended public amenity	3 Areas used but not maintained for intended public amenity	1 Areas not intended or used for public amenity	0 Used for purposes other than that intended such as crime
Use	6-5 Areas used daily or weekly for the intended public amenity	4-3 Areas used monthly or quarterly for the intended public amenity	2 Area is used annually for the intended public amenity	1 Area is not used for the intended public amenity
Use Significance	12-9	8-5	4-2	1
Social Services	6 Provides 4 or 5 of the identified services	5 Provides 2 or 3 of the identified services	4 Provides 1 of the identified services	1 Provides none of the identified services
VAC	6 High	5 Medium	4 Low	NA
Economic Value	6 Provides 3 or more of the identified services	5 Provides 2 of the identified services	4 Provides 1 of the identified services	1 Provides none of the identified services
Service Significance	18 - 13	12-8	7-3	2
Cultural Significance	2 Open spaces within Cultural Heritage Zones	1.5 Opens spaces in which Cultural Heritage points exist	NA	1 Opens spaces with no Cultural Heritage significance
Consolidated	432 - 234	233-60	59-6	<5

5 Conclusions and Way Forward

This report aims to provide an introduction to the INR MOSS Report attached as Appendix 1, whilst providing an outline of open space system examples from three other municipalities. The review of the approach from other municipalities informed the approach for the Msunduzi ESP and the identification of criteria that should be used in the ranking of open space areas for social use.

The social criteria identified should be used during the implementation phase of the ESP to:

- Identify additional open spaces that have social value; and
- Rank areas of ecological value, identified in the INR Report, in terms of their social use value as part of the ecological services offered.

It is however critical that due to the subjective nature of the social aspects of these open spaces, extensive public participation be undertaken to ensure that as many criteria as possible are identified for use in the open space classifications.

6 References

Any references used should be inserted here. Use the reference style.

eThekwini Municipality. **eThekwini Municipality: Environmental Services Management Plan: 2003**. Environmental Management Branch Development and Planning Service Unit eThekwini Municipality (June 2003)

Roberts, D., Boon, R., and Croucamp, P. **eThekwini Municipality: Environmental Services Management Plan: 2001**. Environmental Management Branch Development and Planning Service Unit eThekwini Municipality (June 2001)

Strategic Environmental Focus (SEF). **Gauteng Open Space Project: Phase 3**. Gauteng Department of Agriculture, Conservation, Environment and Land Affairs

SRK Consulting. **Crime Prevention Through Environmental Design Phase 1: Open Space Identification and Auditing**. Prepared for: uMhlathuze Municipality Integrated Development and Planning Department. (November 2004)

Appendices

Appendix 1 Cultural Heritage Map



SRK Report Distribution Record

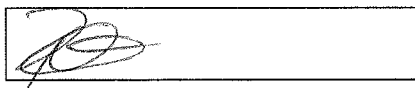
Report No.

376998/FDESP

Copy No.

Name/Title	Company	Copy	Date	Authorised by
ESP	DEAT	1	06/05/2010	P. Emanuel
ESP	DAEA RD	2	06/05/2010	P. Emanuel
ESP	Msunduzi Municipality	3	06/05/2010	P. Emanuel

Approval Signature:



This report is protected by copyright vested in SRK Consulting. It may not be reproduced or transmitted in any form or by any means whatsoever to any person without the written permission of the copyright holder, SRK.