Resource Management Plan for Inanda Dam

Final

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water & sanitation

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CONTRIBUTORS

This Resource Management Plan for Inanda Dam was compiled and recommended by a Technical Task Team, a multi-disciplinary team consisting of stakeholder representatives from *inter alia* Government; the local communities; user groups and the business sector. Contributions made by the larger stakeholder group (refer Appendix A) are also recognised.

In addition, the update of the RMP was done in consultation with a number of stakeholders including members of the public and Government Authorities. The project team for the update of the RMP would therefore like to acknowledge and thank the following organisations for their contribution to the Resource Management Plan.

- Centre for Public Service Innovation (CPSI) and the Cooperative Inland Waterways Safety Programme for inputs into the RMP;
- Stakeholders who attended and contributed at the Public Meeting;
- South African Maritime Safety Authority (SAMSA);
- eThekwini Metropolitan Municipality; and
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Five (5) Yearly review of RMP	August	2019				

EXECUTIVE SUMMARY

This Resource Management Plan is the management, development and institutional plan for Inanda Dam and is reviewed based on the framework set out in page VIII.

The Inanda Dam which is referred to in this document consists of the water body and the water surface as well as the surrounding State Land, utilised by the Department of Water Affairs and Forestry now Department of Water and Sanitation for National State domestic purposes, in the context of a Precinct Plan within the Development Framework of the eThekwini Municipality.

Compiled through the Resource Management Plan procedure, the plan is based on the principles underlying sustainability addressing environmental, industry and community involvement aspects.

As a document to guide the management of Inanda Dam, based on the inputs of all stakeholders, the plan also serves as the basis for monitoring both performance and compliance regarding the following Key Performance Areas as well as meeting the objectives of the National Water Act, (Act No. 36 of 1998):

- Resource management;
- Utilisation; and
- Benefit flow management.

Land and water use options identified as possibilities in and around Inanda Dam include:

- Conservation;
- Agriculture;
- Aquaculture;
- Fishing (food security and recreation)
- Sport and recreation;
- Accommodation and leisure activities, and Tourism.

The primary purpose of the Inanda Dam is to provide drinking water to eThekwini Municipality. However, the need to realise the full potential of the Dam including sport, recreational and tourism related development requires the compilation of a Resource Management Plan.

The structure of the RMP consists of three sections, the first addressing the background; aims and objectives; encumbrances to the plan, and challenges facing the management authority ("The Place").

The second section consists of an integrated environmental management plan and a zoning plan ("The Plan").

The third section outlines the proposed institutional structure ("The People").

"The Plan" deals with the three Key Performance Areas – Resource management; Utilisation, and Benefit flow management (community involvement and beneficiation). Within each area the plan provides insight into the specific rationale regarding the Key Performance Areas, the objectives, the policy and strategies, as well as operational guidelines and action projects which will focus the management decisions, actions and initiatives.

Various zones have been proposed in the Master Plan for both the water surface of Inanda Dam and the State land within the expropriation boundary for which the Department of Water and Sanitation is the user Department, and includes management interventions pertaining to access, utilisation, development and infrastructure. Only access via one of the designated access points or in terms of access agreements will be deemed legal. All opportunities will be subject to a fair and open procurement procedure, and will be dependent on the successful finalisation of Public Private Partnerships.

To effectively and efficiently manage the implementation of the plan, a proposal regarding the management authority as well as institutional structuring and arrangements is made, although the ultimate responsibility regarding the implementation of the RMP will reside with the Department of Water and Sanitation.

Undertaken in this manner it is believed that the sustainable utilisation of Inanda Dam can and will be attained.

The process for the compilation of the Resource Management Plan is summarised Figure 1.



Figure 1: RMP Compilation Procedure

The process for the update of the Resource Management Plan is provided in Figure 2.



Figure 2: Resource Management Plan Update Process

RMP REVIEW FRAMEWORK

Overview

The Resource Management Plan (RMP) process has an integrated planning component and operational planning component, each with a five (5)-year time frame that is reviewed annually.

Integrated Planning Components

A RMP is the primary overarching planning document that describes the administrative and legal framework, contextual background, public participation process followed, vision / mission statements, prioritised management objectives, zoning as well as management policy framework and guidelines. The RMP forms the framework within which all the other planning components a re developed. Within the framework of the RMP, a *Master Plan* provides a strategic guideline for the management, utilisation and development of the water resource and water resource infrastructure within the constraints of the receiving environment. Operational plans, programmes and procedures that support the RMP are either in place or will be compiled where these do not exist.

Authorisation of RMPs

These plans are authorised by the relevant Regional Chief Director and the Deputy Director General of the National Water Resource Infrastructure Branch of the Department of Water Affairs (DWS) in terms of Section 113 of the National Water Act (Act No. 36 of 1998) and operationalised through the following two operational planning components.

Operational Planning Components

A 5-year *Strategic Plan (SP)* that operationalises (or actions) the management authority's management objectives and any projects identified in the RMP and Business Plan. The SP is an operational management component that identifies the activities and tasks that need to be undertaken in the achievement of the RMPs objectives and attaches responsibilities, timeframes, budgets and resources to each activity. The SP is a key planning document that also informs the management authority's Annual Budgeting Estimates and provides information for Annual Reports.

With expenditure estimates drawn from the SP a *Business Plan (BP)* will be developed. The BP is primarily aimed at describing the manner in which the RMP are to be financially resourced. It may address issues of operational efficiency and the optimisation of income generation opportunities in order to bridge any possible shortfalls between required operational expenditure and committed budget allocations.

Authorisation of BP

Once the BP has been approved by DWS, the SP is finalised according to the committed budget allocations and other expected financial income.

RMP Planning & Review

The RMP requires both annual and 5-yearly revisions to ensure that management objectives remain relevant and management actions are continually improved. Figure 3 illustrates the annual and 5-yearly planning and review cycles.¹

¹ This review framework is based on Ezemvelo KZN Wildlife's approach to Integrated Management Plans prepared in terms of the National Environmental Management: Protected Areas Act (Act. No. 57 of 2003).



Figure 3: RMP Review Framework

Planning Process

The rationale of a RMP is to assist DWS and the management authority in ensuring sustainability by protecting the integrity and value of water resources, providing measurable benefits to host communities, and enhancing the satisfaction of users.

By addressing the needs and expectations of resource managers; communities, and users by defining the processes that contribute to sustainability and monitoring the performance of these processes, DWS and the management authority can ensure that their objectives, as well as those of relevant stakeholders are attained in an acceptable and appropriate manner, consistently.

Continual improvement can be achieved by using an ISO 9000 based management system as framework, and the system provides DWS and the management authority with confidence that their policies are relevant and acceptable to all stakeholders.

The procedure used during the planning process is based on DWS's *Guidelines for the Compilation of Resource Management Plans* ensuring the involvement of all stakeholders, as well as interested and affected parties. Opportunity was provided to all participants to actively participate in the planning, discussions and compilation of the management plan, compliant to the prescripts of the National Environmental Management Act (Act 107 of 1998), as well as Chapter 3 of the Constitution of South Africa (Act No. 108 of 1996). This approach ensures inclusivity, transparency and builds trusts between all participants. See Appendix A for a stakeholder list.

The planning procedure for Inanda Dam's First Edition RMP consisted of three distinct phases, namely:

<u>Phase 1:</u> The first phase aimed at ensuring the support of key stakeholders. This phase mainly addressed the encumbrances to the process attaining institutional support and

identifying participants to the process.

- <u>Phase 2:</u> The second phase aimed at ensuring broad stakeholder involvement, building capacity within the stakeholders and providing the stakeholders with relevant information to assist in decision making.
- <u>Phase 3:</u> The third aimed at achieving recommendation for the RMP, prior to submitting the plan to DWS for approval and implementation.

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ACRONYMS AND ABBREVIATIONS

BBBEE	Broad Based Black Economic Empowerment
BP	Business Plan
CARA	Conservation of Agricultural Resources Act (Act No. 43 of 1983)
CoGta	Department of Co-operate Governance & Traditional Affairs
CMA	Catchment Management Area
DAFF	Department of Agriculture, Forestry's and Fisheries
DEA	Department of Environmental Affairs
DLA	Department of Rural Development and Land Affairs
DMC	Dam Management Committee
DWS	Department of Water and Sanitation
ECA	Environmental Conservation Act (Act No. 73 of 1989
ECHOS	Ecotourism Characteristics Opportunity Spectrum
I&AP	Interested and Affected Parties
IDP	Integrated Development Plan
ISO	International Standards Organisation
IWRM	Integrated Water Resource Management
KPA	Key Performance Area
MAR	Mean Annual Runoff
MFMA	Municipal Finance Management Act
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organisation
NWA	National Water Act (Act No. 36 of 1998)
OMC	Operating Management Committee
PAA	National Environmental Management: Protected Areas Act (Act No. 57 of 2003)
PFMA	Public Finance Management Act (Act No. 1 of 1999)

PPP	Public Private Partnership
PSB	Public Sector Body
RDF	Rural Development Framework
RMP	Resource Management Plan
RSC	RMP Steering Committee
SASCO	South African Sports Confederation & Olympic Committee
SAPS	South African Police Station
SP	Strategic Plan
THETA	The Tourism, Hospitality and Sport Education and Training Authority
ToR	Terms of Reference
WRMP	Water Resource Quality Management Plan

1. THE PLACE

1.1. INTRODUCTION

eThekwini Municipality, together with Department of Water and Sanitation (DWS) and Umgeni Water have indicated a need to promote development initiatives, and promote the responsible future management of the water resource and its surrounding natural environment. eThekwini Municipality has identified traditional areas that were incorporated into eThekwini Municipality but have not yet been spatially planned as yet. The area around the Inanda Dam falls within these areas and it is because of this area's great potential for economic (esp. tourism) development in this area that eThekwini Municipality has decided to prioritise spatial planning of the Inanda Dam area. This is meant to ensure equitable access, compatible use, public safety, resource protection and to unlock the potential of Inanda Dam and effect the sustainable management thereof.

To this end the formulation of the **Inanda Dam Precinct and Resource Management Plan** was commissioned. This study is meant to ensure equitable access, compatible use, public safety, resource protection and to unlock the potential of Inanda Dam and effect the sustainable management thereof. It is anticipated that the Precinct and Resource Management Plan (RMP) for the Dam should provide detail on the following areas:

- Establishing and understanding of the study area, including its opportunities and constraints taking into account the current Tourism Feasibility Study;
- Establishing a vision and conceptual framework for the area;
- Establishing synergies with proposed developments in the immediate vicinity; Establishing detail implementation plan for the area
- Ensuring the sustainable and equitable development, utilisation and management of the Inanda Dam by compiling a RMP, based on the DWS Guidelines on Integrated Resource Planning for the Use of Water for Recreational purposes through a facilitated and consultative planning process;
- Efficient allocation of land uses within the study area as per existing and projected demands, and
- Undertaking the above exercises through a managed participation exercise.

1.2. PURPOSE AND SIGNIFICANCE OF THE INANDA DAM

1.2.1. Purpose

The stakeholders of Inanda Dam acknowledge the importance of the Dam as an impoundment to store water, yet place extremely high value on the economic catalyst effect that the Dam can have within the host community, and recognise the recreational value of the Dam, as well as the benefits that can accrue to the region as a result of improved infrastructure, Community Public Private Partnerships; and environmental education.

1.2.2. Significance

As an economic catalyst, Inanda Dam is recognised as being significant within the region, specifically in terms of employment and income generation. The Dam's role as a tourist attraction, as well as local economic development driver is seen as a significant contributor to poverty alleviation and eradication, with slightly less emphasis on agriculture.

The value of Inanda Dam as sporting and recreation destination is recognised and

acknowledged by all stakeholders, yet most stakeholders envisage that the Dam contributes more directly to local economic development, through the establishment of partnerships between landowners, DWS, Umgeni Water, operators and investors. Refer to Table 1 and Figure 3.

Table 1: Purpose and Significance of Inanda Dam

NO	VERBATIM STAKEHOLDER COMMENTS	INTERPRETED AS	PURPOSE
1	Job opportunities - the place of out canoe development club		
2	To provide a sustainable income for those employed to manage it		
3	Job creation and job opportunities		
5	Employment	Employment and Income	
7	Employment opportunity, economic development	(18%)	
8	Benefit - the community benefits from economic development		
9	Provide employment		
10	Provide employment to locals		
11	Purpose is community development and job creation		
12	Tourism & Local Economy		
13	Tourism attraction		
14	Betterment of environment improving tourism	Tourism Attraction (140/)	Economic Purpose
15	Introduce tourism to this community	Tourism Attraction (14%)	(4070)
16	To continue tourism after 2010		
17	Tourists - come & buy our traditional "crafts"		
18	Local Economic Development		
19	Economic development in the country	Local Economic	
20	Community upliftment	Development (9%)	
21	Benefit - community benefits from tourism projects		
22	To improve the rural life in terms of development		
23	Purpose of the Dam - Sustainable development	Land Development	
24	Land development	Potential (3%)	
25	Irrigation	Agricultural Development (2%)	
26	Boating		
27	Sport Swimming		
28	Water sports		
29	Swimming	Water sport (17%)	
30	Fishing		Activity Purpose
31	Sport		(29%)
32	Opportunity for a sailing development programme		
33	Canoeing		
34	Recreation		
35	Driver of the recreational industry	Recreation (12%)	
36	Recreation	1	
37	To provide recreation for the greater Durban and surrounding areas		
38	Recreational facility	1	

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NO	VERBATIM STAKEHOLDER COMMENTS	INTERPRETED AS	PURPOSE
39	For wealthy people who have lots of money to go and have fun		
40	For human consumption		
41	To store water		Consumptive Purpose (14%)
42	Large amounts of water stored for local community		
43	Water	Water supply (14%)	
44	Water supply		
45	Provision of water		
46	Storage of water		
47	Watering of gardens for communities situated near the Dam		
48	Infrastructure - to benefit local people	Infrastructure & facility upgrading (5%) Establishment of partnerships (2%)	
49	Community facilities development		Social Durpose (7%)
50	Social activities		Social Purpose (7%)
51	Opportunity for partnerships with stakeholders		
52	Conservation	Conservation (2%)	Biophysical Purpose
53	Youth get a chance to learn about nature/water conservation	Environmental Education (4%)	



Figure 4: Purpose and Significance of Inanda Dam

1.2.3. The Challenge

Sustainability is a term that is often used, yet seldom understood in terms of its complexity and implications and is thus the overarching challenge facing the management authority of Inanda Dam. Without a focus on sustainability, Inanda Dam will never reach its optimal potential nor contribute to the attainment of the objectives set out in the RMP and legislation such as the NWA. Through the protection and sustainable utilisation of the resource of Inanda Dam it is believed that substantial financial, social and environmental benefits will be generated, making the management thereof both meaningful and viable.

However, the following **broad encumbrances exist** and will have to be overcome in planning and operationalisation of the RMP, including:

- Raised expectations regarding the contribution that the Dam can make to poverty alleviation and eradication;
- Changes to the water quality emanating from both the catchment and immediate surrounding land use;
- Alien vegetation encroachment within the region and along the shoreline;
- The lack of understanding regarding the Dam boundary line, compensation and management responsibility;
- The lack of clarity regarding the relationship between the land owners, DWS, Umgeni Water, and Ingonyama Trust; and
- The lack of development and access in and around the Dam.

1.2.4. Purpose of the Update of the Inanda Dam RMP

The purpose of the update of the Inanda Dam RMP is to ensure that the vision and management objectives captured in the original RMP are still relevant as well as to ensure that changes in the status quo are taken into account in the management actions and Master Plan where necessary.

1.2.5. Process followed for the Update of the Inanda Dam RMP

In order to ensure that stakeholders were involved in the RMP update process, a Public Meeting was scheduled for 20 March 2014 at the Wushwini Arts and Culture Heritage Centre (across from the Inanda Dam Wall). The Interested and Affected Parties (I&APs) database included stakeholders who were involved in the original RMP process as well as new stakeholders. In addition, separate key stakeholder meetings were held with Msinsi.

1.2.6. Overview of Current Institutional Arrangements

1.2.6.1. Official Institutional Structure

DWS is the official custodian and owner of Inanda Dam. However the State Land around the Dam as well as the surface water is managed by Msinsi.

1.2.6.2. Informal Institutional Structure

There is no informal institutional structure in place as Msinsi is responsible for the management of the Dam for recreational use. However, through informal discussions, Msinsi does take into account the requirements of the Traditional Authorities around the Dam.

1.2.6.3. Management of the Water Surface

Management of the surface water is by Msinsi as part of the current agreement. However, initial payment for the Aids to Navigation (AtoN) and demarcation markers (for general navigation) will be undertaken by DWS. However, the provision and maintenance of the demarcation markers at specific recreational clubs/resorts will be for the cost of the latter.

1.2.6.4. Access

There are only two authorised access points currently in place (the DWS access point and the Msinsi access point). There are also a number of access points which are under review (at the informal Ferry, the eThekwini Slipway etc.). Due to the rural nature of the area, there are also numerous informal access points.

1.2.6.5. Permits

A Freshwater Angling License is required from Ezemvelo KZN Wildlife for freshwater angling in the Eastern Cape. No specific angling licenses are required for fishing at the Dam.

1.2.6.6. Safety

There is no overall safety system in place at the Dam.

1.2.6.7. Overnight facilities

Msinsi runs a resort on the banks of the Dam which includes four fully furnished Safari Tents as well as 40 camp sites (with electricity). There is also a proposed hotel development by the Traditional Authority known as the Nkosi Bengu Hotel Development.

1.2.6.8. Event Management

A number of events take place at the Dam including the Bass Classic Fishing Tournament and the Triple Challenge Endurance Event. The Dam is also the second night stop for the Dusi Canoe Marathon. Events are managed by Msinsi.

1.3. LEGAL FRAMEWORK, CONCEPTS AND PRINCIPLES FOR UTILISATION AND SUSTAINABILITY PLANNING

The principles underlying the RMP for the Inanda Dam are based on general principles guiding the attainment of sustainability – sound resource management; equitable and appropriate community involvement and beneficiation; the creation of viable and sustainable business opportunities, and clear policies, objectives and operational guidelines.

One of the key aspects of the update of the Inanda Dam RMP was to ensure that the RMP takes into account new legislation as the RMP forms the overarching framework for the management of Inanda Dam. It is informed by relevant policy, legislation and planning documents administered by other Government Departments. Similarly, these Government Departments are required to use the RMP to inform the development of future policy, legislation and planning documents.

The Inanda Dam RMP was informed by the following policies, legislation, frameworks and strategies:

- Constitution of the Republic of South Africa, (Act 108 of 1996);
- National Water Act (Act 36 of 1998);
- Municipal Systems Act, 2000 (Act 32 of 2000);
- The Development Facilitation Act, 1995 (Act 67 of 1995);
- Communal Land Right Act, 2004 (Act 11 of 2004);
- Restitution of Land Rights Act, 1994 (Act 22 of 1994);
- Intergovernmental Relations Framework Act, (Act 13 of 2005);
- Disaster Management Act, 2002 (Act 57 of 2002);
- Water Services Act, 1997 (Act 108 of 1997);
- State Land Disposal Act, 1961 (Act 48 of 1961);

- Land Administration Act, 1995 (Act 2 of 1995);
- Environment Conservation Act (Act 73 of 1989);
- National Environmental Management Act (Act 107 of 1998);
- National Environmental Management Air Quality Act (Act 39 of 2004);
- National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004);
- National Environmental Management: Protected Areas Act (Act 57 of 2003);
- National Environmental Management: Waste Act (Act 59 of 2008);
- National Veld and Forest Fire Act, (Act 101 of 1998);
- Minerals and Petroleum Resources Development Act (Act 28 of 2002);
- National Heritage Resources Act (Act 25 of 1999);
- Conservation of Agricultural Resources Act (Act 43 of 1983);
- Tourism Act (Act 72 of 1993);
- South African Maritime Safety Authority Act (Act 5 of 1998);
- National Sport and Recreation Act (Act 110 of 1998 as amended);
- Safety at Sports and Recreational Events Act (Act 2 of 2010);
- Game Theft Act, (Act 105 of 1991);
- Merchant Shipping (National Small Vessel Safety) Regulations, 2007
- National Environmental Management Act EIA Regulations (2010);
- Nature and Environmental Conservation Ordinance, 1974 (No 19 of 1974);
- South African National Biodiversity Institute (SANBI) Biodiversity GIS information;
- Kwazulu-Natal Planning and Development Act (Act 06 of 2008);
- KwaZulu-Natal Nature Conservation Management Act (Act 09 of 1997);
- The Natal Nature Conservation Ordinance (Ordinance 15 of 1974);
- Sport and Recreation SA Strategic Plan 2011-2015.

The Section below provides an overview of how the RMP has considered some of key policies, legislation and strategies.

1.3.1. National Water Act (Act 36 of 1998)

The Act aims to ensure that the Nation's water resources are protected, used, developed, conserved, managed and controlled in ways which take into account (amongst other factors):

- Meeting the basic human needs of present and future generations;
- Promoting equitable access to water;
- Redressing the results of past racial and gender discrimination;
- Promoting the efficient, sustainable and beneficial use of water in the public interest;
- Facilitating social and economic development;
- Providing for growing demand for water use; protecting aquatic and associated ecosystems and their biological diversity;
- Reducing and preventing pollution and degradation of water resources;
- Meeting international obligations;
- Promoting Dam safety; and
- Managing floods and droughts.

Further, Section 113 of the Act makes provision for the recreational use of Dams. It further allows that the Minister may control or prohibit access to Dams and make reasonable charges for the a.) use of; b.) entrance

into; and c.) use of any water surface or land associated with any Government Waterworks for recreational purposes.

The definition of water use in the Act includes the use of water for recreational use (Section 21k). Based on this requirement, the Department has published guidelines for recreational use of water and requires the following:

- DWS structures or infrastructure in and around water resources need to be constantly protected and maintained;
- Enforcement through mechanisms such as a Zonal Map, which is developed as part of the RMP process, is essential to resolve conflict amongst users both within the recreational water use; e.g. skiing vs. angling, or with other uses; e.g. agriculture;
- An appropriate degree of policing of irresponsible use should be maintained;
- Establishing water management institutions for the water resource users allows the institutions to charge for their activities therefore improving management and policing which instils a sense of ownership and responsibility among users; and
- Involving Public Private Partnerships (PPPs) could address commercial use but also assist with safety management at the Dam.

Once the RMP has been gazetted, the RMP will regulate access and use of the Dam. It is important to note that users will need to comply with other relevant legislation including the Merchant Shipping (National Small Vessel Safety) Regulations, 2007, The National Water Act, 1998 (Act No 36 of 1998), SAMSA Marine Notices and its Directive on the Standardisation of fixed and floating AtoN and Demarcation Markers on all navigable Inland Waterways in the Republic of South Africa and the relevant provincial ordinances.

According to DWAF (2007) Internal Guideline: Generic Water Use Authorisation Application Process, the term Recreational Water Use (RWU) encompasses the uses of water, including the surface, for:

- The exclusive purpose of sport, tourism or leisure;
- Personal or commercial recreational water use; and
- Activities which contribute to the general health, well-being and skills development of individuals and society.

In addition, the only water use entitlement that currently applies to RWU is Schedule 1 of the Act. Currently the Act is silent on Commercial RWU and thus it is necessary for the RMP to provide guidance this regard.

1.3.2. GN 654 of May 1964

The only Departmental Regulations limiting RWU at Government Waterworks is Government Notice R654, dated 1 May 1964.

These Regulations are read together with section 113 of the National Water Act (Act 36 of 1998) and only apply to the water surface and surrounding State Land of a State Dam, and not to other water resources.

The Regulations provide guidance on access control, use of firearms and other weapons, speed limits, parking areas, trading, reserved areas, fire management, hygiene, camping and accommodation, access to works, photography, safety rules, reckless and unseemly conduct, damage to property, prohibited areas, protection of fauna and flora, swimming, angling, boat Regulations, water skiing and hydroplaning; and general rules.

1.3.3. Water Services Act (Act 108 of 1997)

The Act outlines the roles and responsibilities for the supply of water and sanitation to citizens. It also recognises the rights of all humans to basic water supply and sanitation services. The management of the

Dam cannot compromise the purpose of the Dam especially if it is for domestic water supply.

1.3.4. National Environmental Management Act (Act 107 of 1998) as Amended

The National Environmental Management Act (Act 107 of 1998), or NEMA, as it is simply known, is the foundation piece of legislation for environmental management in South Africa.

Section 2 of the Act has the largest impact on the RMP in that future development and management of the Dam must ensure the following:

- The disturbance of ecosystems and loss of biological diversity both in and around the Dam must be avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- Pollution and degradation of the Dam is avoided, or, where it cannot be altogether avoided, is minimised and remedied;
- The disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;
- Development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;
- A risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and
- Negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

Coupled with these considerations, the following is stipulated with regards to integrating social and economic aspects into the purely biophysical aspects of the environment:

"Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option." (National Environmental Management Act, 1998 (Act 107 of 1998)

1.3.5. National Environmental Management: Protected Areas Amendment Act (Act 15 of 2009)

The National Environmental Management: Protected Areas Amendment Act (NEMPA) (Act 15 of 2009) ensures the protection and conservation of ecologically viable areas in the country. It further seeks to achieve co-operative environmental governance and to promote sustainable and equitable utilisation and community participation.

1.3.6. The National Environmental Management: Biodiversity Act (Act 10 of 2004)

The National Environmental Management: Biodiversity Act (NEMBA) (Act 10 of 2004) provides for the consolidation of biodiversity legislation through establishing national norms and standards for the management of biodiversity across all sectors and by different management authorities.

Chapter 4, Part 2 of the Biodiversity Act provides a listing of species as threatened or protected. If a species is listed as threatened, it must be further classified as critically endangered, endangered or vulnerable. The Act defines these classes as follows:

 <u>Critically endangered species</u>: any indigenous species facing an extremely high risk of extinction in the wild in the immediate future.

- <u>Endangered species</u>: any indigenous species facing a high risk of extinction in the wild in the near future, although it is not a critically endangered species.
- <u>Vulnerable species</u>: any indigenous species facing an extremely high risk of extinction in the wild in the medium-term future; although it is not a critically endangered species or an endangered species.
- <u>Protected species:</u> any species which is of such high conservation value or national importance that it requires national protection. Species listed in this category will include, among others, species listed in terms of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Certain restricted activities are regulated on listed species using permits by a special set of regulations published under the Act. Restricted activities regulated under the Act are keeping, moving, having in possession, importing and exporting, and selling. The first list of threatened and protected species published under NEMBA was published in the government gazette on the 23rd of February 2007 along with the Regulations on Threatened or Protected Species.

Many Dams around South Africa are likely to have threatened or protected species. The management of these species in line with NEMBA must be taken into account in the RMP and by managers at the Dam.

1.3.7. National Environmental Management: Biodiversity Act (Act 10 of 2004): Draft Alien and Invasive Species Lists, 2014 (GN 78 of 2014)

The draft Alien and Invasive Species List proposes certain prohibitions of use of Invasive alien species. This includes catch and release of Bass within Fish Sanctuary Areas, National Parks, Provincial Reserves and Mountain Catchment Areas. This has implications for Bass fishing at all Dams in South Africa.

Should these Lists be promulgated, permits would be required for Bass Fishing. In addition, a Containment Plan for the species would be required.

1.3.8. The National Environmental Management: Biodiversity Act (Act 10 of 2004): Alien and Invasive Species Regulations (GN 33683 of 19 July 2013)

The Alien and Invasive Species Regulations require the development and coordination of Species Management Programmes for all Invasive Species listed in Category 1B.

These species management programmes must stipulate the following:

- The listed invasive species to which it relates;
- The measures to eradicate or control the listed invasive species;
- The areas in which the measures are to be applied; and
- The schemes to fund the measures, if applicable.

Species monitoring, control and eradication plans are also required and the Department will publish guidelines on the compilation of these documents within a year of the publication of the regulations.

The Regulations provide for a register of alien and listed invasive species to be compiled. In addition, all research on invasive species needs to be lodged. This has implications for the RMP as any small-scale fishery proposals or alien invasive management plans will need to be approved in line with these regulations.

1.3.9. The Municipal Systems Act (Act 32 of 2000)

The Municipal Systems Act (Act 32 of 2000) serves to provide the framework to enable municipalities to ensure

access to essential services to their citizens. The Act gives priority to the basic needs of the community, but also gives local government the freedom to set tariffs, and charge for services independently of other municipalities, providing that decisions made are in the best interest of the community.

The Act is of particular relevance to the RMP process, as it requires integrated planning from all spheres of government to ensure equitable and accessible municipal services. This means that any planning or policy-making must be in line with local government policies, planning and initiatives.

1.3.10. Conservation of Agricultural Resources Act (Act 43 of 1983)

The Conservation of Agricultural Resources Act (CARA) (Act 43 of 1983) seeks to provide for the conservation of natural agricultural resources by maintaining the production potential of land, combating and preventing erosion and weakening or destruction of water resources, protecting vegetation and combating weeds and invader plant species.

Given that much of the land surrounding the Dam is State Owned Land it needs to be managed in such a way that it reduces the threat and spreading of invasive alien species.

In addition, Invasive Alien Plants are known to use significant volumes of water in correlation to the plants biomass and thus affect the volume of water available for use.

1.3.11. Public Finance Management Act (PFMA) (Act 29 of 1999)

The object of the Act is to secure transparency, accountability and sound management of the revenue, expenditure, assets and liabilities of Government Departments.

The Act promotes the objective of good financial management in order to maximise service delivery. The Act allows DWS to enter into PPP agreements with the private sector for the commercial use of state assets.

1.3.12. Treasury Regulations of 15 March 2005

Section 76 of the Public Finance Management Act (PFMA) (Act 29 of 1999) provides for the making of Regulations for governing the efficient use and financial management of State Resources.

Section 16 of the Treasury Regulation provides guidance on PPP including the process that needs to be followed, procurement and management of PPPs.

1.3.13. Safety at Sports and Recreational Events Act (Act 2 of 2010)

The purpose of the Safety at Sports and Recreational Events Act (Act 2 of 2010) is to provide measures to safeguard the physical wellbeing and safety of people at at sports, recreational, religious, cultural or similar events held at stadiums, venues or along a route. It also provides for the accountability of event role-players. The Act also provides for Access Control Officers which can be appointed by the Event Organisers. These officers control access of both people and motor vehicles to an event and prevent a person from entering or requesting that a person leaves should the need arise. The act also allows for Peace Officers to be in charge of search and seizures at an event.

The Act also specifies that an Event Planning and Safety Committee must be set up for all events categorized as medium or high risk. This committee should include the following stakeholders:

- The National Commissioner or an authorised member;
- A local authority disaster management department or centre;
- A controlling body, in respect of high-risk events only;

- A stadium or venue owner;
- The event organiser; and
- An emergency service provider.

1.3.14. Merchant Shipping (National Small Vessel Safety) Regulations (GN.R 705 of 8 August 2007)

The National Small Vessel Safety Regulations, 2007 were promulgated under Section 356 of the Merchant Shipping Act (Act 57 of 1951) and provides a number of requirements including:

- Vessel Safety Requirements;
- Crewing; and
- Requirements for Water Skiing.

It also provides for the provision of an Enforcement Officer who can go aboard a vessel and search it and take possession of any intoxicating drugs or liquor. The Enforcement Officer may also request that the Identification Documents, Skipper's Licenses etc. be produced. The Officer may also direct the movement of the Small Vessel where necessary.

1.3.15. South African Maritime Safety Authority Act (Act 5 of 1998)

One of the South African Maritime Safety Authority's (SAMSA's) three legislative mandates is "to ensure safety of life and property at sea". The Act enables SAMSA to administer and execute the relevant maritime legislation.

1.3.16. Kwazulu-Natal Planning and Development Act (Act 06 of 2008)

This act directs and regulates planning and development in KZN. An application may be required before land may be used or developed for a particular purpose. In addition, all developments need to be in accordance with the municipality's planning scheme.

1.3.17. KwaZulu-Natal Nature Conservation Management Act (Act 09 of 1997)

This Act establishes Institutional bodies for nature conservation in KZN. The Authority for this Act is Ezemvelo KZN Wildlife.

The Act also provides the definition of a Protected Area as: (a) declared or proclaimed as such in terms of section 3; or (b) listed in the Second Schedule to this Act.

1.3.18. The Natal Nature Conservation Ordinance (Ordinance 15 of 1974)

The aim of this Act was to consolidate laws in regards to Nature Conservation. Section 11 (1)(b) also provided details for the management of Nature Reserves.

1.4. ALIGNING THE RMP TO RELATED REGIONAL INITIATIVES

The Rural Development Framework (RDF) indicates that the study area accommodates a great variety of tourism and recreation opportunities, which are severely underutilised. It is stated that Inanda Dam and its spectacular hinterland has opportunities within the rural periphery to be integrated into a wider metropolitan tourism system adding a new component to the attraction of the Metro and providing income to the rural areas.

In terms of the eThekwini Rural Framework, the study area has been identified as a local service centre. It has been suggested that the rural areas of eThekwini provide a range of tourism opportunities relating to natural areas, the Dam, culture and recreation. A key objective in the development of the tourism industry in the rural areas will be to encourage local entrepreneurs to become involved in the tourism industry as opposed to local communities only benefiting from job opportunities created in the sector. Some key actions include identification and agreement on rural tourism lead projects (section 4.5, RDF Strategies and Frameworks). The local level service centre KwaNgcolosi (Ward 2) to be one of the several rural investment and service nodes that have been identified within the rural sub-region area in order to create linkages between areas and to facilitate co-ordinated delivery in each area. The Rural Development Framework (RDF, 2003) states clearly the importance of appropriate protection, management and utilisation of environmental resources of the rural periphery. Integration into the development of the rural areas forms one of the structuring elements of the RDF, and includes several projects and initiatives including:

- **<u>eThekwini Rural Road Links</u>**: The study area that the eThekwini Rural Road Link deals with encompasses all rural areas of the eThekwini Municipality between the old Durban "urban edge" and the Municipal boundary. The total population of the study area is 660 000, accommodated in an area roughly 1 500 km² in extent. Planned developments have been identified for the rural periphery of the Municipality and they are the Mixed Investment Nodes, Rural Investment Nodes and the Local Service Nodes. Tourism development is proposed within the rural peripheral areas, as the tourism/recreation potential is largely under-exploited. Inanda Dam has been included within these areas. Regarding roads, the KwaSondela and KwaNgcolosi nodes have been identified for northwards upgrading.
- **Proposed Shembe Village**: The proposed project lies within Ward 3, which falls, under the Qadi Traditional Authority area north of the Inanda Dam. The Nazareth Baptist Church approached the Department of Traditional and Local Government Affairs and eThekwini Municipality to prepare a planned and co-ordinated environment for accommodating church members and development of the Shembe Village area, addressing the expansion of religious and tourism activities. The project intends to guide the development of tourism potential and to establish an institutional framework within which development can be implemented. This framework will give a clear understanding and unique identity to the area and will lead to the improvement of natural and cultural resource management.
- **Intathakusa**: Intathakusa an initiative by eThekwini Municipality to integrate communities living within eThekwini's urban edge, aims at establishing a rural community tourism facility, which would create small business opportunities in the area, comprising a retreat facility, conference centre, business functions, social events, tourist destination and leisure activities. The objectives for Intathakusa are as follows:
 - o To disperse eThekwini visitors to new and unexplored places of interest;
 - To create linkages between the natural resources area, the emerging organic farming scheme within Intathakusa and the Inanda Tourism Trail;
 - To establish a rural community tourist facility which would create small business opportunities in the area.
- **Rural ABM Tourism Strategy (2006):** The purpose of the Rural ABM Tourism Strategy is to develop tourism strategies for the rural areas of the eThekwini Municipality. The

interventions suggested aim to facilitate and enhance economic livelihoods and improve systems of governance in the rural areas. The Rural ABM covers a variety of areas outside the eThekwini's urban edge, which includes the Inanda Dam and is therefore an important study to align with the Inanda Dam RMP. The Rural ABM identified that a wide variety of tourism and recreation opportunities, which are severely underutilized. It suggested that many of these opportunities identified have limited success and remain as isolated events. It is important to recognise that the opportunities in the rural periphery be integrated into a wider metropolitan tourism system adding on a new component to the attraction of the Metro, while also providing expertise and income to the rural areas. The significance of local tourism and recreational development was also recognised and highlighted because of the economic upliftment it will bring, and that in order for any local tourism development to be successful it will require local public partnerships with the relevant rural communities.

Furthermore, a RMP cannot function in isolation and so all associated planning initiatives must be considered and used to inform the development of the RMP.

The following planning initiatives were taken into account in the updating of the RMP:

- The IDP of eThekwini Metropolitan Municipality;
- The Water Services Development Plan of eThekwini Metropolitan Municipality;
- The Strategic Framework of Water Services, 2003;
- The Provincial Spatial Economic Development Strategy, 2003;
- National Spatial Development Perspective, 2006; and
- The New Growth Path, 2012.

1.5. BACKGROUND TO INANDA DAM

1.5.1. Physical Environment

Inanda Dam, located in the valley of a thousand hills approximately 42 km North of Durban, was completed in 1989 and took two years to fill with water. The Dam is 23 km long from the bridge to the Dam wall and is 1.5 km at the widest point and 50 meters deep at its deepest point. The water surface of the Dam covers 1440 hectares and has a shoreline of approximately 100km at full capacity. Table 2 below provides a summary of relevant statistics pertaining to Inanda Dam.

Table 2: Inanda Dam Statistics

Component	Description
Maximum height of Dam wall	57m
Length of Dam wall	610m
Length of spillway	140m
Approximate length of Dam	29km
Approximate width of Dam	1.5km
Spillway discharge at high flood level (1:200yr)	4000 m ³ /s
Maximum capacity of outlet works (river outlet)	34.4 m³/s
Maximum capacity of outlet works (service outlet)	14.2 m³/s
Maximum spillway capacity (including emergency spillway)	11 100 m³/s
Gross storage capacity	256 million m ³
Annual yield	96 million m ³ /annum
Full drawdown level/FSL	147.00m
Lowest drawdown level	115.75m
Non-overspill crest level	157m
Lowest foundation level	92m

Inanda Dam Resource Management Plan

Component	Description
Surface area at FSL	1426 hectares
Catchment Area	3949km ²
MAR (mean annual runoff) natural	60.09 million m ³
MAR (mean annual runoff) observed	57.96 million m ³
MAP (mean annual precipitation)	870 mm
Regional maximum flood	8100 m ³ /s

1.5.1.1. Climate

The Inanda Dam is situated in a high, summer rainfall region, with an annual precipitation level of between 800 mm – 1125 mm. Summers are very warm, temperatures range from 25° C to 38° C. Winters are moderate with relatively cool days, with rare cold spells in the morning and at night, with temperatures ranging from 9° C to 19° C.

1.5.1.2. Geology

The underlying geology of the Inanda Dam and its surroundings, forms part of the Natal Group. The rock overlying the Natal Group is a thick unit of Tillite that was deposited in a glacial environment by retreating ice sheets about 300 million years ago. At this time South Africa was part of the supercontinent Gondwana, which was situated near the South Pole and covered with ice. Rocks imbedded in the slowly moving ice sheets scoured and polished the underlying older rocks giving rise to glacial pavements. The main rock types in the area include, Gneiss, Arenite, Shale and Tillite.

1.5.1.3. Topography

The topography of the Inanda Dam is characterised by rolling hills, incised valleys and kloofs leading into the Dam. There is a large change in height from the top of the hills, the highest point being 571 m above sea level and the Dam wall, being the lowest point at 171 m above sea level.

1.5.1.4. Hydrology

The hydrology of the Dam and its surroundings is characterised by a large amount of perennial tributaries flowing in from the surrounding hills with the main inlet and outlet being the Umgeni River.

1.5.1.5. Soils

Soils in the area are characterised by a small percentage of clay, between 0% and 35% with an average depth of between 450 mm and less to 750 mm.

1.5.1.6. Water Quality

The water quality of the Dam is accepted as being of a high quality, providing for excellent bass fishing conditions. However, there are localised nutrient problems at the in-flow of the Dam due to pollution and organo-phosphates. Various testing points are in operational use.

Water quality of the Inanda Dam is satisfactory. The Dam is predominantly eutrophic but mesotrophic closer to the Dam wall. This trophic status is typical of Dams downstream of large urban areas. The major risk to eutrophication is associated with wastewater treatment plants not operating optimally while rainfall related runoff, abattoir discharges and poor sanitation pose a moderate risk. The main source of the nutrients is the Msundusi river upstream of its confluence with the Umgeni river.

Excessive hyacinth growth at the inflow is a symptom of nutrient enrichment of the Dam.

Another major problem is that of the *Microcystis* blooms (blue-green algae) during the warmer seasons. This results in:

- Potential potable water treatment problems from taste and odor causing algae
- Potential toxicity to humans and livestock & aquatic ecosystem during especially warmer weather, although this is not a common occurrence there have been a few incidents of odors caused by decaying algal and organic matter.

Sources of pollution that affects the water quality in the Dam could be classified in two groups for the purpose of the RMP.

- a) "External sources" This implicate the "given" water quality that is received from "upstream". This is not part of the area that is included in the RMP, but a management of this part of the water resource is imperative for the success of any water quality management plan (or WRMP) of the Dam. Management of this "upstream" component should link with the RMP through institutional arrangements with the DWS and the CMAs. The major sources of pollution to the Dam is:
 - The Msundusi river via the Umgeni river inflow.
 - The Mgceweni stream which from drains the Cato-ridge area into the Umgeni River.
 - The Mshazi river which flows directly into the Dam.

The three major streams mentioned above are characterised by sewage pollution from overflowing manholes and inefficient sewage treatment pants, diffuse pollution and also extensive invasion with alien vegetation

- b) "Internal" sources Sewage disposal (including French drains, package plants and poorly serviced septic tanks) from developments, informal agriculture (cattle, chicken farms) and diffuse pollution sources that is generated within the purchase line, all impact adversely on the water quality of the Dam.
- c) Sand mining operations currently carried out on the banks of the Umgeni and Mshazi rivers. These activities are conducted close to the inflow of the Dam and affect the water quality by raising the suspended solids at these points as well as aid in spreading the aquatic alien invasive weeds along the area of operation.

1.5.1.7. Flora

The flora of the area consists of Eastern Valley bushveld, KwaZulu-Natal Sandstone Coastal Sourveld, Natal Hinterland Thornveld, Ngongoni Veld and Scarp Forest. The main land cover consists of Forests, unimproved grassland, thicket and bushveld with numerous disturbed areas based on settlements and subsistence farming.

1.5.1.8. Fauna

The Inanda Dam is characterised with a very high abundance of birdlife due to the habitat diversity despite the presence of human settlements. Smaller species of animals have been observed but large game remains absent. The reptile population is diverse and includes skinks, snakes and monitor lizards.

1.5.1.9. Socio-economic Environment

Inanda Dam falls part of eThekwini Metropolitan Municipality which is located on the east coast of South Africa in the Province of KwaZulu-Natal (KZN). The Municipality spans an area of approximately 2297km2 and is

home to some 3 442 361 million people.

1.5.1.10. Population Dynamics

Census 2011 information is set out in Table 3 below:

Table 3: Population (Source: Stats SA, 2011)

Ward	Population
Ward 2	30 435
Ward 3	42 405
Ward 8	35 540
Ward 9	31 926

The number of households is set out in Table 4.

Table 4: Number of Households (Source: Stats SA, 2011)

No. of people	No. of Households
140 306	32 883

Figure 4 shows that the study area is made up of 48% males and 52% females. Children make up 31%, which highlights people who are still dependant on their parents. There is a high percentage of people that fall within the labour force which at the same time identifies the youth (15 - 34 years) of the area.





1.5.1.11. Educational and Health Facilities

According to Census 2011 information, 7.5% of the population have no formal schooling. The number of people with Matric qualifications make up 31% of the population. H igher education level was reached by 11.8% of the population whereby this includes certificates, diplomas and degrees that have been obtained. (Refer Figure 5). Wards 2, 3, 8 and 9 fall under semi-rural areas of the eThekwini Municipality. The study area has limited access to services and has unplanned arrangements. Facilities do exist around the Dam, yet also within the wider area.



Figure 6: Educational Levels (Source: Stats SA, 2011)

1.5.1.12. Current Employment Status

Figure 6 below highlights the employment status of the population surrounding Inanda Dam, 35.7% of the population is employed whilst 18% is unemployed, furthermore 5.9% of the population are discouraged work seekers and 40.4% of the population are not economically active.



Figure 7: Employment Status (Source: Stats SA, 2011)

1.5.1.13. Annual Household Income

Households with no income make up 12.8% of the community of the study area. Most people fall within R19 201 – R38 400 range (refer Figure 7).


Figure 8: Annual Household Income (Source: Stats SA, 2011)

1.5.1.14. Types of Housing

Approximately 70.4% of the population lives in formal housing and 4.9% living in informal structures. Traditional houses make up 23.5% of the households. Refer Figure 8.



Figure 9: Housing Typology (Source: Stats SA, 2011)

2. THE PLAN

2.1. OVERACHING FRAMEWORK

DWS is the custodian of South Africa's water and forestry resources and is primarily responsible for the formulation and implementation of policy governing this sector and also

promotes effective and efficient water resources management to ensure sustainable economic and social development.

2.1.1. DWS's Vision

DWS has a vision of being:

'a country that uses water ... productively and in a sustainable manner for social and economic activities; in a manner that promotes growth, development and prosperity of all people to achieve social justice and equity.'

2.1.2. DWS's Mission

As sector leader, the mission of DWS is to serve the people of South Africa by:

- guiding, leading, developing a legislative framework for regulating and controlling the water sector;
- conserving, managing and developing water resources in a scientific and environmentally sustainable manner in order to meet the social and economic needs of South Africa, both now and in the future;
- educating the people of South Africa on ways to manage, conserve and sustain water resources;
- cooperating with all spheres of Government, in order to achieve the best and most integrated development, and
- creating the best possible opportunities for employment, the eradication of poverty and the promotion of equity, social development and democratic governance.

2.1.3. Key Objectives of the Department

The Department's key focus areas and strategic objectives are as follows:

- Ensure reliable and equitable supply of water for sustainable economic and social development including the eradication of poverty.
- Ensure the protection of water resources.
- Develop effective water management institutions.
- Align staff, stakeholders and general public to a common vision for Integrated Water Resource Management (IWRM) and develop, capacitate and empower them in best practices thereof.
- Ensure provision of basic water supply and sanitation for improved quality of life and poverty alleviation.
- Ensure effective & sustainable delivery of water services to underpin economic and social development.
- Ensure effective Water Services Institutions.
- Ensure effective local-level operations and management of DWS water services schemes. Promote and support sound policy and practice of water supply and sanitation to achieve millennium targets in Africa.
- Promote IWRM in Africa in support of the New Partnership for Africa's Development (NEPAD).

To guide initiatives aimed at attaining DWS's vision, mission and objectives, an operational policy regarding the use of water for recreational purposes has been developed. This policy addresses planning,

safety, authorisation, equity, communication, capacity building, institutions and linkages, legislative and legal framework, and monitoring and information management, and provides strategic direction to the Inanda Dam RMP.

2.2. VISION, MISSION AND OBJECTIVES FOR INANDA DAM

2.2.1. Vision

Based on the original vision determined during the 2008 RMP process as well as key stakeholder meetings and public meetings as part of the update process, the vision for Inanda Dam was highlighted as:

To ensure regional economic growth and development in an environmentally and socially sustainable manner through effective partnerships with all stakeholders.

2.2.2. Mission

As a regionally significant water resource, the stakeholders around Inanda Dam accept their mission as being:

- The creation of a conducive environment for investment and operation;
- The incremental value adding to the recreation and sporting industry in and around the Dam; The equitable management of social, commercial and environmental benefits emanating from the Dam;
- The improvement of infrastructure and services; and
- The conservation of both the water resources and adjacent land.

2.2.3. Key Management Objectives

To attain the mission for the Inanda Dam, and accept the challenges, the following key objectives for the Dam's management, utilisation and development were acknowledged by the stakeholders:

- To improve access to the Dam;
- To ensure equitable access, both to the Dam and the recreation industry based on the resource;
- To ensure effective intergovernmental co-operation; To ensure improved infrastructure and services;
- The establishment of Community Public Private Partnerships to unlock the potential of the Dam; and
- The provision of clear guidelines and zones to regulate the use of both the water and land surrounding the Dam.

Additional to these key objectives and for its implementation is the appointment of a management authority to manage the Dam and its surrounding State land that is dynamic, focused and representative of the stakeholders and landowners of the host community, where the host community is defined as the community directly affected by and adjacent to the water resource. The performance of this institution in its endeavours to attain these objectives will be constantly audited and reviewed, to ensure that DWS can assist wherever necessary and appropriate.

2.3. MANAGEMENT APPROACH

To ensure that the RMP contributes to the attainment of the objectives set by its stakeholders, a process approach based on the ISO 9000 management system forms the basis of the management approach for the Inanda Dam. The rationale for this approach is to assist DWS and the management authority in ensuring sustainability by protecting the integrity and value of environmental resources, providing measurable benefits to host communities, and enhancing the (refer users DWS's Guidelines for the Compilation Resource satisfaction of of Management Plans).

Without a plan it will be impossible to co-ordinate and manage the activities required to unlock the potential of the Inanda Dam. Only by measuring the performance of specific actions and operational guidelines against objectives will it be possible to effectively manage the water resource. The structure of the plan is based on Key Performance Areas (KPAs), refer Figure

10, aimed at attaining the key management objectives set for Inanda Dam by the stakeholders, namely:

KPA 1: Resource Management – natural and cultural resource management and land expansion and incorporation;

KPA 2: Utilisation – public private partnerships; public access; infrastructure and marketing,

KPA 3: Benefit Flow Management; and

KPA 4: Institutional Plan.



Figure 10: Management Framework

Specific objectives aimed at unlocking the potential of Inanda Dam were set by individual sector groups, based on access, use, development, and infrastructure requirements. Table 5 lists these objectives within the various KPAs.

Table 5: Management Objectives According to KPAs

КРА	OBJECTIVE					
	To identify conservation worthy areas and manage the shoreline of the Dam in terms of alien plant removal and pollution control.					
Management – natural and cultural resource	Education programmes regarding the impacts of alien invasive species and Wash bay system to be implemented to prevent alien invasive species infestations					
management and land expansion and incorporation	Containment Plan for invasive fish species. This may require a Catch and Destroy Policy should the NEMBA: Draft Alien and Invasive Species Lists, 2014 (GN 78 of 2014) be promulgated					
	To identify, acknowledge and conserve resources of paleontological, archaeological, historical, cultural and religious significance.					
	To establish a system of peace officers to enforce regulations around the Dam.					
	To fence off key activity areas for control and safety.					
	To manage the use of the water surface through demarcated zones for, but not limited to, Canoeing, Ski boating, Sailing, Fishing, No wake (launch) zones.					
	Standardised AtoN and demarcation system as well as Unique Positioning Number (UPN) System to be implemented including a formalised Rescue Operation Point					
	To develop a ferry system at the Dam for both community \ mobility and tourist activities.					
	To constantly ensure that water uses and operations are verified, registered and regularised (by among other initially undertaking an audit of existing access, use, development, and infrastructure)					
 – public private partnerships; public access; 	To promote, accommodate and manage a variety of uses on and around the Dam e.g.: picnic/braai, hiking, boat sailing, kayaking, bird watching, model boats, swimming, fishing, baptisms etc. (jet skiing should be encouraged at other Dams such as Inanda Dam).					
marketing	To promote the sustainable development of the area through strategically phased and prioritised developments in terms of infrastructure provision and private investment alike, including additional and improved camping sites, additional ablution facilities at the peninsula development node, accommodation such as hotels, lodges etc, in close proximity to the Dam.					
	To promote sufficient and shared access roads, slipways and moorings for use by various users in order to effectively use and limit access points (specifically permanent boats on the Dam).					
	Feasibility of a community access card to be assessed					
	Information brochures to be developed to inform communities about the potential uses of the Dam and how to join recreational clubs and societies.					
	and constantly maintained and that additional access roads are provided in order to unlock the development potential of the area.					

Inanda Dam Resource Management Plan

КРА	OBJECTIVE
	Management of fencing and firebreaks.
	To provide a level of services (bulk and internal water, electricity and sewerage infrastructure) in line with affordability and in an equitable manner to the various areas around the Dam, though sufficient to accommodate intended future developments.
	To ensure Local Black Economic Empowerment (BEE) benefits during the provision of all infrastructure and the private developments.
KPA 3: Benefit Flow Management	To improve safety and security for users around the Dam
	To investigate and address outstanding reparations issues related to the construction of the Dam.
	To clarify the delineation of management boundary and specific responsibilities between government role players and to communicate this to the various stakeholders and communities.
	To discuss and conclude tourism co-management agreements between the State and relevant community structures.
	Formalised institutional structure to be put in place
Institutional Plan.	To ensure that regulatory and management responsibility related to the Dam be appropriately finalised and communicated to all role players.
	To affect intergovernmental co-operation through the alignment of "development" and "use" approvals and permissions through appropriate institutional governance arrangements.
	To ensure the protection of water resources within the catchment areas and inlet of the Dam through effective institutional structures and arrangements.

The management objectives are subsequently discussed within each of the KPAs by addressing the following aspects:

- Rationale
- Management Support (Funding, human resources, policies and protocol etc.) Plans and Programmes (Operational guidelines, Action projects)
- Performance Indicators

Undertaken in this manner, the RMP can be implemented based on clear policies and objectives within each KPA, and with operational guidelines to facilitate the co-ordination of actions to a common vision. Decisions are based on objectives and vision, guided by policy statements. In this way the management authority, host community and users will clearly understand why certain activities are allowed or prohibited.

A *Master Plan*(refer section 2.8 and Appendix C, Figure 25) provides strategic direction for the management, utilisation and development of the Dam within the constraints and opportunities of, as well as vision, objectives and policies for the receiving environment.

2.4. KPA 1: RESOURCE MANAGEMENT

2.4.1. Natural Resources

2.4.1.1. Alien Plant and Pollution Control

To identify conservation worthy areas and manage the shoreline of the Dam in terms of alien plant removal and pollution control, the following ISO management interventions are recommended:

Table 6: Alien Plant and Pollution Control

Objective				
To have the Inanda Dam and area surrounding the Dam free of alien vegetation				
Rationale				
Alien plants and pollution, both pose a major threat to the region's sport, recreation and tourism potential. Without effective control the region's biodiversity will be affected, and without high quality of water the recreational potential is depleted.				
Management and Support				
 Planning and execution of eradication programmes must be done in cooperation with Working for Water. Synchronise eradication projects in the catchment by engaging adjacent landowners and local environment initiatives. 				
Policy and Guidelines				
Remediation				
 The control of invasive plant species is addressed under the Conservation of Agricultural Resources Act (CARA Act No 43 of 1983). Relevant legislation as well as municipal by-laws must be complied with. 				
 Combating must be based on the latest alien plant control technology and knowledge. Preference should be given to non-chemical eradication methods wherever possible. Due to the negative impact of actial approving on riportion, and approximation approximation and approximation. 				
• Allow only weed free vessels to enter or exit the Dam				
Horticulture				
Exotic species must be removed and replaced with appropriate indigenous				
trees, where appropriate.				
 No alien vegetation may be introduced anywhere within the Dam boundary line and only indigenous planting schemes will be permitted. 				
Action Projects				
 Determine the success of current Working for Water initiatives to eradicate water hyacinths, identify opportunities and constraints. 				
II. Ensure that required resources are available for the removal of water hyacinths when action is required, especially during December and January.				
III. Quantify and qualify the extent of invasive alien vegetation in order to have a base line survey.				
IV. Continuous removal of problem plants within the Dam boundary line.				
V. Rehabilitate infested areas with suitable endemic species.				
VI. Continuous monitoring of occurrence of problem plants on the Dam surface and within the Dam boundary line.				
VII. Develop an inspection and cleaning mechanism to ensure that vessels entering the Dam do not contaminate it with alien vegetation.				
Indicators				

Use the base line survey to measure the effectiveness of the eradication programme and adapt actions accordingly. Indicators for the effectiveness can be measured as:

- I. A decrease in stands of alien species within the Dam boundary line; and
- II. Water surface free of water hyacinth.

Roleplayers

DWS

Department of Agriculture and Environmental Affairs eThekwini Municipality

2.4.2. Cultural Resources

2.4.2.1. Cultural Heritage Resource Management

To identify and protect the cultural heritage resources which might exist around the Dam, the following ISO management interventions are recommended:

Table 7: Cultural Heritage Resource Management

Objective

To identify, acknowledge and conserve resources of paleontological, archaeological, historical, cultural and religious significance.

Rationale

Despite the degree of development in the region, the area around Inanda Dam has certain cultural heritage resources, both tangible and intangible, worthy of protection, albeit of local significance.

These resources need to be identified, documented, conserved and utilised to ensure their relevance and protection. Cultural tourism within eThekwini is an important catalyst for development and the region around Inanda Dam should strategically link up with established cultural heritage routes and products.

Management and Support

- The South African Heritage Resources Agency (SAHRA) is the national body responsible for the protection of South Africa's cultural heritage resources.
- · Community representatives and organisations as well as the Ward Councillor
- Faith Based Organisations
- Research Institutions
- Involvement of local conservation and social initiatives (BVC, MPA, RGKB, etc)

Policy and Guidelines

Conservation

- Cultural and heritage resources need to be conserved and managed in line with the National Heritage Resources Act (NHRA).
- Conservation management needs to continuously update and expand the knowledge base regarding cultural resources, through research, documentation and protection, as well as training and capacitation.
- Conservation work should not only be undertaken where the cultural resource is threatened, but also where the resource can contribute to enhancing the tourism experience.
- Human remains that are less than 60 years old are protected by the Human Tissue Act (Act 65 of 1983 as amended). Human remains older than 60 are protected by the NHRA.
- Identification and documentation
- Staff of operators, contractors and the management authority need to be trained in identifying possible cultural resources.
- A data base of cultural resources should be available and updated by properly trained and accredited researchers.

Utilisation

- Reasonable access must be ensured to grave sites for ancestors.
- Controlled access to the Dam should be provided for practice of baptism or similar religious activities.
- Both tangible and intangible heritage and cultural resources can be incorporated into a visitor experience programme ensuring an authentic and culturally appropriate experience.

Action Projects

- I. Confirm the presence of the possible grave sites and implement protection measures.
- II. Establish a relationship with the faith based organizations and develop a procedure with regards to the use of the Dam for ritual activities.
- III. Formalise a relationship with the South African Heritage Resource Authority(SAHRA).

Indicators

For effective management of cultural and heritage resources it is essential that performance be monitored utilising techniques and procedures based on good heritage practice, cost efficiency and applicability, appropriateness, compliance with heritage guidelines and consistency over time. Among others the following indicators can be used:

- Condition of physical resources (for example Damage to grave sites).
- · Amount of heritage sites discovered.
- · Successful use of the Dam.
- Implementation of conservation measures and other recommendations.
- Roleplayers

AMAFA

2.5. KPA 2: UTILISATION

2.5.1. Access, Use and Development

2.5.1.1. Ferry System

To develop a ferry system at the Dam for both community mobility and tourist activities, the following ISO management interventions are recommended:

Table 8: Ferry System

Objective

To improve access of the Dam through the establishment of a ferry service.

Rationale

Although, there is an informal ferry system being run at the Dam this is small and cannot cater for all movements between communities. It also difficult to ensure that safety requirements are being met by this informal ferry system at this time. Further, the establishment of the Dam severely impacted on the movement patterns of the affected community, an impact that can be mitigated through the establishment of a formalised ferry service for the local community and tourists.

Management and Support

· Municipality to provide access and availability for funding of project

Policy and Guidelines

· SAMSA Regulations for inland vessels

Action Projects

- Investigate the possibilities of offering this service as a public system, run by the municipality or as a private initiative.
- Appoint Operator
- Safety checks
- Begin Operation

Indicators

· Ferry system is established and operational in a viable manner

Roleplayers

DWS

Department of Transport eThekwini Municipality

2.5.1.2. Access and Use Regulation

To constantly ensure that water uses and operations are verified, registered and regularised (by among other undertaking an audit of existing access, use, development and infrastructure), the following ISO management interventions are recommended:

Table 9: Access and Use Regulation

Objective

To evaluate the existing access and uses of the Dam basin and adjacent state and privately owned land to ensure that usage is lawful and that the necessary permits and authorizations are in place

Rationale

Without clarity regarding authorised access and use of water based on a clear regulatory environment neither DWS, potential investors and users can take informed decisions, resulting in problems regarding the attainment of the specific objectives of any of these sectors, sustainably.

Management and Support

- The management authority is responsible for overall management and co-ordination of the proposed action project.
- Various national, provincial and local government departments must provide information regarding land and water use authorisations.

Policy and Guidelines

- The data obtained during the process of the RMP compilation, as documented in the Research Report, should be used as a starting point.
- DWS should be consulted with regard to water use authorization, as contained in the DWS's authorization and management system.

Action Projects

I. Embark on a project to evaluate the current use of the Dam basin and adjacent state and privately owned land and regularize unlawful usage.

Indicators

I. A database of all permits and authorizations for water surface and land use, highlighting whether use is legal or illegal. If illegal, time frames for regularization must be stated.

Roleplayers

DWS

eThekwini Municipality

2.5.1.3. Sustainable Development

To promote, accommodate and manage a variety of activities and facilities in and around the Dam in a strategically phased and prioritised manner in terms of infrastructure provision and private investment alike including:

- Tourism (additional and improved camping sites and ablution facilities; accommodation such as hotels, lodges etc.)
- Recreation and sport (hiking, bird watching, swimming, sailing, kayaking, model boats, fishing etc.)
- Cultural activities (baptisms),

The following ISO management interventions are recommended:

To achieve the objective of sustainable development, facilities in and around the Dam will be incorporated into marketing initiatives such as the Inanda Heritage Trail, as well as aligned to schools education programmes.

Table 10: Sustainable Development

Objective

To promote sustainable development around the Dam

Rationale

Unlocking the potential of Inanda Dam requires compatible use and development aimed at establishing a local economy that can sustain itself. This will require accommodation, increases access, activities and employment opportunities without negatively impacting on other economic sectors such as agriculture which can also contribute to the local economy.

Management and Support

Policy and Guidelines

National Environmental Management Act

Action Projects

- Compile database of all tourism and related facilities.
- Develop training and support programmes

Indicators

- Increase in tourism products and programmes
- Support for tourism in region

Roleplayers

DWS eThekwini Municipality Department of Education

2.5.1.4. Zoning

To manage the use of the water surface through demarcated zones for, but not limited to, canoeing, ski boating, sailing, fishing, no wake (launch) zones, the following ISO management interventions are recommended:

Table 11: Zoning

Objective

Effective zonation and compliance aimed at unlocking the Dam's potential sustainably.

Rationale

Inanda Dam, as a water resource of local significance, yet subject to National legislation, requires the involvement of all spheres of government working towards a common goal. This intergovernmental cooperation regarding the development and use of Inanda Dam needs to be formalised within a legislative environment to support Government's commitment to the region and its people.

Management and Support

DWS to clarify Government Notice Regulation 654 as regulatory framework.

Policy and Guidelines

- Utilise Regulation 654 to enforce zonation
- Provide clarity regarding penalties regarding non-compliance
- Inland Vessel Regulations

Action Projects

- I. Demarcate zones with buoys, and provide clear zonation maps at entrance and launch sites
- II. Monitor compliance with zonation

Indicators

- I. Compliance with zonation plan
- II. Record of breaches

Roleplayers

DWS

eThekwini Municipality

2.5.2. Infrastructure

2.5.2.1. Access Roads and Facilities

To ensure that key public access routes to the Dam are upgraded and constantly maintained and that additional access roads are provided in order to unlock the development potential in the proposed areas of:

- Bridge (Nyuswa side) Enyoni
- Eskebheni
- From Kwazini store to the end of Dam
- KaMatshitshana
- Mapengana
- Matshitshana

- Mbhanana
- Msinsi (the proposed commercial hub on the Mhlabatini peninsula
- Mshazi
- Mthontofela
- Ngcukwini School
- Wushwini
- Zamokuhle store
- The 'Madhouse'
- Next to the police station, and
- To promote sufficient and shared access roads, slipways and moorings for use by various users in order to effectively use and limit access points (specifically permanent boats on the Dam), the following ISO management interventions are recommended:

Table 12: Access Roads and Facilities

Objective

Increased accessibility for various modes of transport around the Dam in order to maximize potential opportunities and benefits from it

Rationale

Without easy access, visitors will not utilise the Dam and its resources, inclusive of signage to and from the Dam.

Management and Support

Provision and upgrading of access roads falls under the functions of eThekwini Municipality and thus the management programmes and support services (e.g. maintenance & cleaning) will be guided by the roads management programme within the relevant department.

Policy and Guidelines

eThekwini Policies & Guidelines (To be included)

Action Projects

- Main access road upgrading
- Secondary Road Maintenance

Indicators

- Additional Access points created
- Length of Roads upgraded
- Increase in traffic volumes
- · General condition of the roads and satisfaction of the users

Roleplayers

eThekwini Municipality

2.5.2.2. Services

To provide a level of services (bulk and internal water, electricity and sewerage infrastructure) in line with affordability and in an equitable manner to the various areas around the Dam, though sufficient to accommodate intended future developments, the following ISO management interventions are recommended:

Table 13: Services

Objective

Constant expansion and maintenance of service networks (especially Water & Sanitation) to the highest public and private affordable standards which would accommodate current densities and future intended development around the Dam in an ecologically sustainable manner.

Rationale

The lack of services severely hampers investment and development. By providing these requisite services Government implements its commitment to the creation of a conducive environment for investment and development.

Management and Support

Provision and upgrading of sanitation falls under the functions of eThekwini Municipality and thus the management programmes and support services (e.g. maintenance & cleaning) will be guided by the sanitation programme within the relevant department. Of particular importance is the minimisation of a pollution risk to the water.

Policy and Guidelines

Require municipal policies and guidelines on sanitation alternatives outside of the urban edge to consider the potential benefits of nodal development around the Dam as well as safer technologically advanced on site sanitation options.

Action Projects

Alternative Sanitation Solutions

Indicators

- Increased number of households with access to improved sanitation
- All development nodes with high level of sanitation facilities

Roleplayers

eThekwini Municipality

2.5.2.3. Fencing

To fence off key activity areas for control and safety, the following ISO management interventions are recommended:

Table 14: Fencing

Objective

Clearly defined areas for development

Rationale

Each of the development nodes must be secured to create an environment conducive for investment and operation, a necessity to attain the broader objectives set for Inanda Dam.

Management and Support

Access control management and resources as well as long term maintenance of the fence(s).

Policy and Guidelines

Fencing Act

Action Projects

- · Identify areas requiring fencing
- Develop fencing protocol

Indicators

Effectively managed areas Breaches

Rpleplayers

DWS

2.6. KPA3: BENEFIT FLOW MANAGEMENT

2.6.1.1. Local BEE

To ensure local BEE benefits during the provision of all infrastructure and the private developments, the following ISO management interventions are recommended:

Table 15: Local BEE

То	ensure that local	communities	participate	and benefit	in local	economic	development i	nitiatives
occ	urring in and aro	und the Dam.						

Rationale

Objective

Without equitable benefits to the host community the developments envisaged for Inanda Dam will not be sustainable. Despite the excellent guidelines provided by National Treasury regarding Public Private Partnerships and BEE, it is critical that local entrepreneurs be afforded opportunity to participate in the development initiatives.

Management and Support

- The management authority is responsible for overall co-ordination and flows.
- The local community user group must provide relevant input.
 - Linkages must be established with relevant government departments.

Policy and Guidelines

- Recognise, train, capacitate and empower individuals from the surrounding community with proven interest and entrepreneurial skills.
- Through regular communication with community groups, it will be possible to become more sensitized to community perceptions, as well as to expose entrepreneurs to the opportunities that are available.

Action Projects

- I. Compilation of a database of job seeking individuals and SMMEs from the local community and ensure that it is regularly updated and monitored.
- II. Implement skills development programmes where opportunities exist.
- III. Ensure that BEE is attained in any PPP projects.

Indicators

I. Measure capacitation of individuals and SMMEs through database mentioned previously.

Roleplayers

DWS

eThekwini Municipality

2.6.5. Safety and Security

To improve safety and security for users around the Dam, especially upstream, the following ISO management interventions are recommended:

Table 16: Safety and Security

Objective

A safe and secure environment within which recreational water use can take place.

Rationale

Without a safe environment visitors will not utilise Inanda Dam, opting for water resources which are safer and more secure.

Management and Support

- Water Safety lifesaving provision and equipment.
- Visible policing
- Budget

Policy and Guidelines

- eThekwini Rural safety strategy
- Crime Prevention Through Environmental Design guidelines

Action Projects

Security and Safety Plan

Indicators

- Reduction in crime occurrences.
- Increase sense of safety experienced by users.

Roleplayers

- South African Police Service
- eThekwini Municipality SAMSA
- Lifesaving South Africa
- Swimming South Africa
- NSRI
- Msinsi Volunteer Officials

2.6.6. Reparations

To investigate and address outstanding reparations issues related to the construction of the Dam, the following ISO management interventions are recommended:

Table 17: Reparations

Objective
Obtain clarity regarding reparations
Rationale
The shadow of disputed reparations hangs over Inanda Dam, and without clarity regarding the State's official stance this matter will severely affect plans, projects and programmes envisaged for the region. The State needs to review and reassess the reparations regarding compensation awarded to affected individuals and communities to ensure effective implementation.
Management and Support
DWS providing guidance in this regard
Policy and Guidelines
National Water Act
Action Projects
 I. DWS to convene IGF meeting to clarify this matter II. Communication campaign ensuring all stakeholders are clear on government's approach.
Indicators
Satisfied stakeholders

Roleplayers

DWS Department of Land Affairs eThekwini Municipality Reparations Forum

2.7. KPA 4: INSTITUTIONAL PLAN

2.7.1. Management Boundary and Responsibility

To clarify the delineation of management boundary and specific responsibilities between government role players and to communicate this to the various stakeholders and communities, and to ensure that the regulatory and management responsibility related to the Dam is appropriately institutionalised, the following ISO management interventions are recommended

Table 18: Management Boundary and Responsibility

Objective				
To implement co-management agreements and where appropriate service contracts to unlock the				
economic and conservation potential of the Inanda Dam.				
Rationale				
Without effective co-management agreements it will not be possible for DWS to unlock the potential of Inanda Dam, nor will the land owners be able to add value to the their land without access to the water. By clarifying the management boundary through effective co-management agreements these joint objectives can be attained.				
Management and Support				
Clarity on boundary for stakeholders and co-management agreements				
Budget				
Policy and Guidelines				
National Water Act				
• PFMA				
State Land Disposal Act				
Action Projects				
Agreements to be drafted				
Constitutions to be agreed upon				
Indicators				
Co-management agreements successfully implemented				
Roleplayers				
DWS				
eThekwini Municipality				

2.7.2. Catchment Management

To ensure the protection of water resources within the catchment areas and inlet of the Dam through effective institutional structures and arrangements, the following ISO management interventions are recommended:

Table 19: Catchment Management

Objective

DWS Regional office to provide inputs

Rationale

Effective resource management requires a catchment based approach, rather than focusing on the local management interventions only. Inanda Dam management must play an active role in the catchment forum and other institutional structures and arrangements as they are established.

Management and Support

DWS Regional office to provide inputs

Policy and Guidelines

DWS Regional office to provide inputs

Action Projects

DWS Regional office to provide inputs

Indicators

DWS Regional office to provide inputs

Roleplayers

DWS

eThekwini Municipality

2.7.3. Intergovernmental co-operation

To affect intergovernmental co-operation through among other the alignment of "development" and "use" approvals and permissions through appropriate institutional governance arrangements, the following ISO management interventions are recommended:

Table 20: Intergovernmental Co-operation

Objective Unlocking the economic potential of the Dam requires a close working relationship between all spheres

of Government.

Rationale

Inanda Dam, as a water resource of local significance, yet subject to National legislation, requires the involvement of all spheres of government working towards a common goal. This intergovernmental cooperation regarding the development and use of Inanda Dam needs to be formalised within a legislative environment to support Government's commitment to the region and its people.

Management and Support

Commitment by all spheres of government and departments

Policy and Guidelines

Intergovernmental Framework Relationship Act

Action Projects

Formalise relationship in terms of IGFRA

Indicators

Meetings and efficiency

Roleplayers

DWS eThekwini Municipality Intergovernmental Forum Umgeni Water

2.7.4. Industry Association

To establish a joint association of aquatic sport users with a single control body for localised sporting codes, the following ISO management interventions are recommended:

Table 21: Industry Association

Objective

Establishment of an Association for all aquatic sport users

Rationale

Various recreation and sport organisations will be involved in providing activities at Inanda Dam. To ensure compliance with local operational rules and code of conduct on Inanda Dam and Industry Association, representing both the sport and recreation operators as well as federations must be established. This Association will serve as conduit for communication between Government and Industry.

Management and Support

- Linked to Municipal departments and units regarding the use of public areas for sport & recreation.
- Provision of dedicated gathering and sport areas and support facilities (e.g. launch sites)

Policy and Guidelines

SRSA Guidelines

Action Projects

Convene working sessions between sporting and Industry Associations

Indicators

- Harmony between users
- Conflict reduction
- Minutes of meetings

Roleplayers

DWS Sport and Recreation South Africa eThekwini Municipality Lifesaving South Africa Swimming South Africa Umgeni Water Msinsi Various fishing clubs Various craft representatives (Jet ski, Sailing, Canoe & Event Organisers etc.)

2.7.5. Co-management

To discuss and conclude tourism co-management agreements between the State and relevant communities structures, the following ISO management interventions are recommended:

Table 22: Co-management

Objective

Equitable benefits and sharing of responsibilities between state and community structures

Rationale

DWS's policy of acquiring only enough land to manage the water resources effectively necessitates comanagement agreements with surrounding landowners to ensure sufficient land for development. Undertaken in this way the community as *de facto* landowners can benefit tremendously from the asset jointly created between the state and themselves. This relationship must be formalised prior to agreements being finalised with private sector partners.

Management and Support

DWS and National Treasury to provide support

Policy and Guidelines

PPP Toolkit for Tourism

Action Projects

Compile co-management agreements between state and community structures Establish criteria to provide guidance to potential developers regarding legislative requirements e.g. EIA requirements

Indicators

- Concluded co-management agreements
- Investment facilitated

Roleplayers

DWS Umgeni Water eThekwini Community Leaders (Nkosi and Councillors) Sport and Recreation South Africa

2.8. MASTER PLAN

2.8.1. Process

The planning of the Inanda Dam has been undertaken to ensure organised development, equitable visitor access, sound resource management and optimal community beneficiation. This approach also minimises the potential conflict that could arise between the various stakeholder groups.

The zoning system is based on the Ecotourism Characteristics Opportunity Spectrum (ECHOS) as set out in the DWS *Guidelines for the Compilation of Resource Management Plans*. To effectively zone a resource an assessment of all relevant information must be undertaken to ascertain both habitat and landscape sensitivity. Following this sensitivity analysis, an assessment of the environmental characteristic must be undertaken. This assessment entails the determination of current environmental character status, opportunity for ecotourism development based on a spectrum of the environmental limitations and stakeholder objectives.

Both the environmental sensitivity analysis and ECHOS zonation guide management interventions

required to achieve resource management, social and economic objectives. Management interventions such as access, utilisation, development nodes and infrastructure are selected and planned for accordingly.



Figure 11: Zoning Process

2.8.2. Master Plan

Based on a variety of factors, including the conservation objectives of the IGR, as well as the objectives of stakeholders the Inanda Dam master plan was compiled. This Master Plan summarises access, use, development and infrastructure requirements for the Dam.

2.8.3. Access

Effective access to the water resources is essential, and requires specific control measures since the Dam is almost entirely surrounded by a road network. Only access via one of the approved accesses will be deemed lawful. Currently, the only lawful access is via the Msinsi site. Until future accesses have been provided the current access will function as a multiple recreational user access site. Once the focused accesses have been developed, the current access can be limited to the concessionaire at the peninsula.

Currently lawful access to the Dam is limited to the Msinsi Holdings site on the Mhlabatini peninsula, despite the area being traversed by numerous tar roads. Proposed access points include sites close to the Dam wall, the eastern shore below the Shembe Village, two accesses from the north, a limited access into the fishing zone and an access along the southern shore line. These additional accesses will greatly increase the utilisation of the Dam, and establish the Dam as an important economic catalyst. Several road sections need to be upgraded to allow for access from the coastal region north of Durban, Pietermaritzburg etc.

A network of ferries is recommended to increase accessibility for communities affected by the Dam.

2.8.4. Utilisation

Besides the safety zone around the Dam wall, Inanda Dam has four broad water use zones, the first being an area dedicated to water skiing, the second and area for sailing, the third being for motor boats, and the fourth a fishing concession area.

Within the motorised boating zone, and the sailing zone two training areas linked to the local schools are to be established. These training facilities should target all water based activities including kayaking, rowing, sailing, swimming, fishing bank and boat based, skiing and power boating. These facilities should target school children, as well as offer training to the broader community. Sporting federations must be requested to partner with these facilities, have a clear annual programme, and establish Inanda Dam as a leading player in the field of transformation, training and development.

Land based zonation includes areas for day visitors, overnight visitors, marinas, residential, agricultural and training facilities.

Several small entrepreneurial activities of local relevance do occur on the State land surrounding the Dam. These activities must be regularised in a manner appropriate to the level of impact and duration.

Commercial ventures such as lodges, marinas, conferencing facilities etc. must comply with National Treasury Regulations and procurement practice.

2.8.5. Development Cores, Nodes and Sites

Development nodes around Inanda Dam include the Mhlabatini peninsula, Umgeni offices, Shembe Village, and northern and southern shores.

The existing Msinsi Holdings site is proposed to be developed as a yacht club and marina, and could include aspects such as day visitor facilities, overnight accommodation, clubhouse, restaurant and possibly even a small hotel, fractional ownership houses, etc. as well as facilities to manage sailing vessels, yachts etc.

Below the Shembe Village land based developments will include an orientation centre for visitors planning to visit the Shembe Village. This site could include a small hotel, conference centre and infrastructure for a proposed cable car to the top of the hill on which the Shembe Village is located. Close to this node is a smaller node focusing on organic farming, as well as a lodge targeting the fishing community.

Two other small lodges targeting the fishing community are located on the northern shore line, one below Inanda Hill and the other on the upper reaches of the Dam.

A low density residential resort is located on the northern peninsula. This resort will target the power boating and bass fishing market. A marina and associated accommodation in the form of sole use houses or fractional ownership is proposed for the southern peninsula, south west of the Msinsi Site.

These two developments can provide a major capital investment in to the region, and if correctly marketed, form the foundation of all development around the Dam.

A number of agricultural development nodes exist around the Dam, and it is envisaged that these projects should evolve from subsistence projects to higher value crops – organic vegetables, volatile oils, etc. – to improve their viability. Aspects such as water pumps, composting etc. need to be developed to support these initiatives.

2.8.6. Infrastructure

Requisite infrastructure to unlock the potential of Inanda Dam, includes upgrading of the road from the Umgeni River to the tar road, several short link roads, and a tourism ring road from the Dam to the top of Inanda Hill.

Infrastructure for the ferry service must be provided similar to what eThekwini Municipality does for its bus service.

To increase safety a pedestrian bridge is required at the top end of the Dam to link the community to the schools, on opposite sides of the river. The bridge will reduce drowning as a result of the children swimming or wading across the Umgeni River.

2.9. PRECINCT PLAN

2.9.1. Purpose of Precinct Plan

The Precinct Plan cover the area directly adjacent to the Dam and potentially impacting on the basin of the Dam as well as being directly influenced by the activities and development around the Dam. It is therefore the purpose of the precinct plan to also guide issues of access, land use and development and infrastructure outside of the State owned land of the Dam. The intention is to ensure that the precinct around the Dam is developed and managed in a manner which will support and benefit directly from developments around the Dam.

2.9.2. Precinct Context & Boundary

The precinct area around Inanda Dam is characterised by tribal ownership and used mainly for residential purposes and some subsistence farming activities. There are also prestine, undeveloped areas all around the Dam shoreline and especially towards the northern parts of the precinct. The nearest settlements are the traditional settlement areas of Qadi, KwaNgcolosi, Phephetha and Manyuswa TAs especially concentrated towards the east and south-west. The boundary of the precinct was determined by an initial 500 m buffer around state land boundary, but extended in the south to include facilities and development nodes anticipated to directly impact on development around the Dam.

2.9.3. Access

Access was discussed within the Concept Development Plan and within the wider context of the precinct is will be important to upgrade and maintain these access routes to a level suitable to service the intended developments and uses at the Dam. It should be noted that these routes will be promoted as routes for development access, it will be developed only to a level which will be affordable to the economic potential of the areas within the identified investment nodes.

2.9.4. Land use

Apart from key development nodes which will contain residential, social and economic facilities, there are only three broad land use categories proposed. Firstly, all environmentally valuable areas (including high value combined sensitivity zones as well as buffer areas around water runoff areas) are identified. Where potential agricultural pockets of smaller that 20 Ha were surrounded by environmentally valuable areas, these were also included under the latter. Within these areas it is envisaged that conservation efforts will be encouraged, although limited subsistence agriculture could be allowed. Secondly the areas with agricultural potential are identified based on topography and soil conditions as well as existing agricultural activities and identified high potential agricultural

areas. These areas are envisaged to accommodate commercial and communal agriculture and in the case of Inanda these areas are most likely to include basic crop production with scattered high value initiatives. Lastly some low impact residential estates and tourism related activities area is proposed on the southern portions the Dam. The proposed densities of these developments will be guided by infrastructure capacities and allowed mixed land uses prescribed by the municipality.

Apart from the said land uses, the development nodes of within the Phephetha, Qadi & KwaNgcolosi areas are all envisaged as rural service delivery centres under the rural development framework and will thus include a localised mix of residential developments and social facility provision as indicated.

2.9.5. Infrastructure

As the precinct area is located outside of the urban edge of the municipality the level of service reticulation might not emerge as the same levels found in the more densely populated urban areas. Especially sanitation would for now be the responsibility of the owner/ developer of land around the Dam to provide on site sanitation at a level and standard acceptable to the eThekwini Municipality. The supporting infrastructure projects e.g. road access maintenance will be proposed as infrastructure projects to the relevant municipal departments.

3. THE PEOPLE

3.1. THE ROLE PLAYERS

The success of the Inanda Dam RMP and its implementation is dependent on the level of involvement by stakeholders and beneficiation and as such, the Inanda Dam should not function in isolation from these stakeholders. Stakeholder categories include:

- Resource Managers;
- Industry or Users of the resource;
- Land Owners;
- Policy Makers (including DWS, eThekwini and other relevant Government Departments at national, provincial and local spheres), and
- Other Interested and Affected Parties (I&APs), including Non-governmental Organisations, and Civil Society Structures (including Community Leaders: Nkosi and Councillors).

Role Players in final decision making must be DWS, Umgeni Water and eThekwini. A driver should be appointed within each government department to ensure the KPAs are met.

(Refer Appendix A for a detailed stakeholder list.)

By forming close working relationships with resource managers and private sector operators and contractors, benefits can emanate from the management and utilisation of the Dam, allowing the management authority the opportunity to disseminate these benefits to neighbouring communities in an equitable manner based on sound Government policy supported by the relevant authorities.

In an effort to optimise benefits to all role players (refer Figure 12), the implementation of the RMP for the Inanda Dam will be undertaken in an adaptive, dynamic and integrated manner based on sound ecological, social and economic principles. The policy will be to seek advice and support from DWS regarding the key objectives of the NWA, and ensuring that the activities of the Inanda Dam enhance these objectives. Additionally, it will be the policy of the management authority of the Inanda Dam to document activities, accomplishments, problems and solutions, so that management of other similar water resources can be aided and guided regarding possible solutions and pitfalls.



Figure 12: Role Players

Without the alignment of Government plans – national; provincial, and local – it will be extremely difficult for Government to attain its broad objectives, as would it be difficult to achieve co- operative governance. For this reason DWS and the Inanda Dam management authority will provide an opportunity for its Governmental planning partners such as Department of

Agriculture (DoA); Department of Land Affairs (DLA), and Department of Environmental Affairs and Tourism (DEAT), together with eThekwini Municipality to actively be involved throughout the planning and implementation of the management plan, guided by the principles contained in Chapter 3 of the Constitution.

Crucial to the success of the plan is the finalisation of a functional relationship between the State and the four traditional councils surrounding the Dam. As the *de facto* landowners of the land surrounding the Dam basin, these stakeholders are crucial partners in unlocking the economic potential of the Dam. As co-asset creators these structures need to be recognised, respected and included in the institutional structure and proposal.

3.2. INSTITUTIONAL PLAN

Currently the institutional arrangements for Inanda Dam consist of an arrangement between DWS and Umgeni Water regarding bulk water supply. However, through the updating process, the institutional arrangements for the Dam have been updated to consists of three sets of tools which will be used to manage the Dam so that the Vision can be met.

The first toolset involves three separate but linking committees all chaired by the DWS (as the custodian of all surface water in South Africa). The membership of each committee and their roles and responsibilities is provided in Section 3.2.1., 3.2.2. and 3.2.3. below.

The second toolset involves an open communication forum which allows all stakeholders to be involved in the management of the Dam. The purpose of this forum is information sharing and discussion. It also provides a platform for dealing with issues and challenges faced by users. The third toolset includes a number of management tools including agreements, affiliations and targets.

Figure 13 below provides a visual representation of how these toolsets function together.



Figure 13: RMP Structure

3.2.1. RMP Steering Committee (RSC)

The RSC is made up of representatives from National Government/Agencies. The main focus of this meeting is to ensure both the DMC and OMC are performing all necessary functions. The committee will also provide high level guidance. The RSC allows for a formal reporting structure between the Chief Director: Operations and the National Water Infrastructure Branch: Integrated Environmental Engineering (NWRIB:IEE). Relevant departments from DWS including Operations, Water Quality Management and Catchment Management will be included in the RSC. The committee will meet every six months. Figure 14 below provides details of the membership of the RSC.



Figure 14: RMP Steering Committee (RSC)

3.2.2. Operations Management Committee (OMC)

The OMC will function at a catchment level and will provide high level guidance for all Dams occurring within one catchment. This is an existing reporting line between Area Managers for various schemes and the Director: Operations. The implementation of the RMP will be added as an agenda item, hence providing an opportunity to discuss the RMP. The Regional Manager will be fully aware of all commercial and/or recreational activities/opportunities at all Dams within the cluster.





Figure 15: Operating Management Committee (OMC)

3.2.3. Dam Management Committee (DMC)

The DMC is responsible for the day to day operations at the Dam and includes a larger pool of representatives. This committee is chaired by the delegated DWS Official. The DMC is involved in the management of the UPN System as part of the Cooperative Inland Waterways Safety Programme (CIWSP) and includes the following representatives:





Figure 16: DMC Membership

One of the main functions of the DMC is to assess commercial opportunities at the Dam. As such, an agenda item related to the Strategic Plan for Commercialisation (SPC) is required. In addition, changes in water quality, developments in the area, status of Aquatic Invasive Species and education and information programmes should be discussed. The DMC should meet every three months (i.e. quarterly).

One of the most important functions of the DMC is to organise and facilitate the quarterly Dam User Open Day. All stakeholders should be invited to this meeting so that issues regarding use of the Dam can be discussed. If necessary, serious issues can be escalated from the Public Open Day to the OMC and then RSC so to ensure swift conflict resolution. The Open Day also provides an opportunity for the DMC to inform users of the Dam of all rules and regulations governing the access and use of the Dam.

Operational management of recreational activities such as ensuring the AtoN and demarcation markers system is in place and setting times for use of the Dam (within the current framework of GN 654 of 1964) will also be managed by the DMC.

The final structure of the DMC may change once agreements with Authorised Access Points Representatives are concluded. The updated DMC membership list will be added as an addendum of the Gazetted RMP.

Lastly, the DMC is also responsible for ensuring the BP is implemented.

3.2.4. Management tools

The RSC, OMC and DMC will have a number of management tools which will enable proper management of the Dam in line with Legislative requirements.

3.2.4.1. Terms of Reference

The RSC, and DMC will be guided by Terms of Reference regarding roles and responsibilities. The Terms of Reference will provide guidance on the following management aspects:

- Meeting frequency;
- Roles and Responsibility of Chairperson;
- Roles and Responsibilities of Members;
- Minutes and attendance requirements;
- Reporting requirements;
- Management of agreements;
- Management of access objectives;
- Management of development targets;
- Strategic Plan for Commercialisation (SPC);
- Management of Water quality monitoring;
- Management of the Control of Aquatic Invasive Species;
- Management of Development Pressure; and
- Management of UPN system and wash bays.

Terms of Reference are not required for the OMC as this is an existing reporting structure.

3.2.4.2. Agreements

1.) Agreements between DWS and Implementing Agent

One of the main management tools available is the use of agreements to ensure proper use of the Dam in line with the RMP vision and objectives. Currently DWS has an agreement with Msinsi as the Implementing Agent (IA) for Inanda Dam. It is suggested that this agreement be updated in light of the RMP. Further, this agreement should include the following:

- Management of Recreational Clubs;
- Management of Public Access Area;
- Management of Wash Bay and UPN System;
- Management of Community Skills and Training Programmes; and
- Management of commercial activities (in line with Treasury Requirements).

All agreements should be in line with the RMP requirements which as a minimum must achieve the following:

- Conditions on IA's mandate to enter into agreements with other parties on the use of the surface water for recreational use;
- Terms and conditions regarding equitable access must be included in ALL agreements;
- Guidance on the use of the State Resource for Public-Private Partnerships (PPP) in line with Treasury's requirements;
- Safety management to be in line with SAMSA requirements;
- Targets and objectives for the management of the Dam;
- Roles and responsibilities regarding the following:
 - Maintenance of AtoN and Demarcation Markers;
 - Maintenance of Wash Bays;
 - Maintenance of Recreational Infrastructure;

- Maintenance of Fencing;
- Maintenance of the UPN System including signage;
- Management of agreements with other recreational users;
- Responsibilities on monitoring development and access targets (as part of agreements with other recreational users).
- Conditions on the use of the Dam for small scale fisheries or for commercial fisheries projects; and
- Conditions for the negotiations of agreements with recreational clubs. As a minimum, it is suggested that all agreements between the IA and any new recreational clubs, should be reviewed and accepted in writing by the DWS Operations Manager for the Eastern Cape. They should also be presented to the DMC prior to signature to ensure the vision and objectives of the RMP are met.

Irrespective of the nature of the agreement the following must be incorporated:

- Clear start and end dates and terms of renewal/extension;
- Rights and obligations of both parties;
- Access points to be used must be stipulated. The RMP makes provision for six access points which are currently managed by Msinsi (see Master Plan). Access agreements with DWS will be necessary within the next year. Failure to do so will result in unauthorized access points being closed (see section on Access agreements for more details);
- IA's (and therefore DWS's) exclusion of liability;
- Terms and conditions of improvements made to the property should be stipulated. All improvements require consent from DWS and the DMC. Furthermore, the financial consequences should this requirement not be met should also be stipulated in the agreement. No permanent structures shall be built within the 1:100 year floodline without additional approval as required by Section 21 (c) and (i) of the National Water Act, 1998 (Act no 36 of 1998);
- The extent of the rights to use the resource should be stipulated;
- Safety management to be in line with SAMSA requirements;
- Targets and objectives for the management of the Dam;
- Clear instructions on the financial requirements of both parties, and where and when money
 must be paid should also be stipulated. All recreational clubs and societies on State Land
 must be managed in line with National Treasury requirements. Lease agreements for use of
 State Land should include fair remuneration at the current market value;
- All agreements should include a cancellation clause if requirements cannot be met;
- All clubs or associations must be affiliated to a national sporting body recognised by the South African Sports Confederation and Olympic Committee (SASCOC)
- All agreements must include a cancellation clause if clubs or associations fail to obtain affiliation within one year from date of signature of the agreement;
- Limitations of the number of people allowed to access the water surface of the Dam based on carrying capacity of Dam as well as the carrying capacity of the CIWSP wash-bays must be adhered to;
- A list of current and potential recreational activities allowed at the Dam;
- Requirements for safety, disaster management and emergency response plans;
- Duties and responsibilities of either party regarding maintenance, management and infrastructure;
- A list of prohibited activities;
- Prohibition of subletting portions of the leased area;

- Conditions on the use of the Dam for small-scale fisheries projects; and
- A mandate for programmes to assist in equitable access and redressing past imbalances at the Dam, such as sponsored gate-fees for members of previously disadvantaged communities. This should be in line with the RMP. The DMC will then be required to report against all targets at the OMC.
- All agreements must include a cancellation clause should community access targets not be met.
- All recreational activities must be in line with the RMP, which once gazetted, becomes the mechanism to control and manage recreational use. Although no Section 21k Water Use License Application (WULA) is required, all activities must comply with all other relevant legislation requirements including the following:
 - The Merchant Shipping (National Small Vessel Safety) Regulations, 2007, -Control of Boating;
 - Section 21 (a) of the National Water Act, 1998 abstraction;
 - Section 21 (c) and (i) of the National Water Act, 1998 construction of slipways/infrastructure;
 - Safety at Sports and Recreational Events Act, 2010 Events; and
 - Provincial Ordinances Fishing.

These agreements should be updated within the next year.

2.) <u>Recreational Use Agreements</u>

Recreational Clubs must enter into an an agreement with the IA who will be responsible for the surface water management of the Dam. All recreational use at the Dam must be through an appropriate legal framework. However all agreements must be approved in writing by DWS and the DMC.

Recreational Use Agreements must be developed inline with the conditions stipulated in the agreement between DWS and the IA.

All agreements must be finalised within one year of the RMP being gazetted.

3.) Land Management Agreements

The DMC should actively consider land management strategies that improve the efficiency of current practices. This could include co-management agreements with surrounding or adjacent landowners which may result in environmentally sustainable and more efficient land management.

All agreements should be should be put in place within one year of the RMP being gazetted.

4.) <u>Access Agreements</u>

All surface water access must be formalised. The conditions for such access must be written into the agreement. All illegal practices must be addressed. Appropriate action must be taken to ensure that all Parties comply with the requirements of the RMP.

All adjacent landowners and clubs must be made aware that access to the surface water should only be through authorised access points. Accessing the surface water through unauthorised access points is an illegal activity unless they enter into a formal agreement with DWS.

Further, a formal agreement with DWS will be required by all adjacent landowners and recreational clubs that have direct access to the water surface of the dam through 1.) constructed slipways; 2.) natural slipways; or 3.)

jetties for angling and/or launching of boats. Additional agreements with the IA may also be necessary.

The wash bay must be built on State Property as part of the CIWSP. A formal agreement is necessary between the IA and DEA on the management and maintenance of the facility. The agreement will be overseen by the DMC.

All agreements should be put in place within one year of the RMP being gazetted.

5.) Safety of Navigation Agreements

Agreements between SAMSA and DWS/other relevant Parties/Bodies are to be concluded to allow them to:

- Exhibit the relevant AtoN; and
- Establish or deploy the relevant fixed and/or floating AtoN.

6.) <u>Event Applications</u>

All events must be managed through an event application process. While the application may be made to the IA, DWS and the DMC must approve the application. These applications must follow a specific template and will include the following:

- Number of participants;
- Emergency Response Plan;
- Advertising and branding (will need to be in line with DWS communication requirements);
- Access points to be used;
- Costs; and
- Films/photographs that will be generated to be in line with DWS communication requirements.

Further, all Events must meet the requirements of the Safety at Sports and Recreation Act, 2010 (Act No 2 of 2010).

3.2.4.3. National Affiliations and Development Targets

All recreational clubs should be affiliated to a SASCOC affiliated organisation. The development targets set by the National Organisations must be met. The Clubs must be affiliated within two years of the RMP coming into effect.

4. WAY FORWARD

4.1. Compilation of Business Plans

Based on the updated strategic objectives identified for Inanda Dam through the original RMP process as well as the RMP update process, a suite of BPs were developed. The BP describes the financial management and operational requirements to implement the Objectives of the RMP. The Financial Plan will facilitate the implementation of listed and recommended activities in the RMP.

The Business Plans are approached in the following manner:

- Identify Strategic Objective informed by RMP;
- Determine Interventions Each objective was divided into practical interventions;
- List Detailed Activities Interventions were further divided into activities, in order to establish timeframes and provide guidance to the entity who implements the business plan;
- Establish Key Performance Indicators per intervention Key Performance Indicators allow for monitoring and evaluation;
- Establish timeframes per activity;
- Establish a budget per activity; and
- Determine Funding sources Innovative mechanisms to obtain funding were identified.

4.2. Review of RMPs and Business Plans

The RMP presents a twenty-year vision for the Dam. This vision will be implemented through the RMP which will be revised and updated every five years, according to changing priorities, constraints and achievements. This document constituents the first update of the RMP. Within this five-year cycle of the RMP, the BPs will identify key objectives in line with a changing status quo and potential change in circumstances. After five years the RMP will be reviewed and updated so to identify new objectives in line with the vision for the Dam.

The BPs are updated annually.

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APPENDIX A: RMP PROCESS STAKEHOLDER LIST

Table 23: Inanda Dam Stakeholder List

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INDUSTRY	CONTACT PERSON	CONTACT DETAILS
ANGLING:	Kon Hoinalia	031 3010404
Bass Fishing S.A. (Eagle	Reir Hainslie	031-3010404 for: 021 2044011
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KZN BASS Federation	Grant Scott – Williams	K7N Bass Federation
		083 447 1850
		031 2660560(p)
		031 2660572 (f)
		grant@katn.co.za
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Chairman of Durban Boat		"Richard Holmes" <u>noicombe@teikomsa.net</u>
Mandate to represent 20		D Mike Robinson
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		0845822911 cell
		(031)7646455 res.
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YAUGHTING		
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Catamaran Association of		0317008991
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Co-Owner: R Racing		
rachts.		
HIKING:		
Amblers Club	David Hankocks	0726150559
Durban Ramblers Hiking	Mr Mike	0828223106
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Ward Councillor	Gill Noyce	"Gillian Noyce" gnoyce@africamail.co.za

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Balanced Environment	Construction	Sue George Balanced Environment 082 961 5750 P.O. Box 1634, Wandsbeck 3631 balancedenviro@xsinet.co.za
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APPENDIX B: BACKGROUND INFORMATION

Figure 17: Geology

- Figure 18: Elevation
- Figure 19: Soil Depth
- Figure 20: Vegetation
- Figure 21: Conservation Status

Figure 22: Land Cover

- Figure 23: Land Use
- Figure 24 Ward and Traditional Authority Boundaries



Figure 17: Geology



Figure 18: Elevation





Figure 19: Soil Depth

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Figure 20: Vegetation





Figure 21: Conservation Status

_	Status
٢	Town
0	Settlement
	Homestead
۲	Natural feature
T	Place of interest
	Sewage works
	Place of interest
*	Viewpoint
0	bar Lodea
	Shon/service
	Specialist service
300	Bridge
1	River crossing
	Spot heights
	Homestead
٠	School
-	Secondary
5	Other
-	Dam wall
	Canal
1-	Pipeline
~	- Perennial river
2	Elood bank
2	Perennial
1	Island in water
-	Urban: high density
-	Urban: open land
-	Cadastre
Cor	servation status
	Endangered
	Vulnerable
	Less threatened
	N/A
	ECOTOURISM APRIKA



Figure 22: Land Cover



Figure 23: Land Use



Figure 24: Ward and Traditional Authority Boundaries

Rowth (DOT 3996)	
Provincial Reads	
Chenal Roeds	
Load Runds	
Revers (Surveys & Mecoring 2005)	
Cardworrer (565 30000)	
Wed Enumber en (Demandon Board 2	896
#045 (2HIZ)	
Alles Vegetalian	
Enactine and Post Outprige	
Chaurtend Woodhands	
Cry Valley Taxet & californit House	18
Cathodre	
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Cetterneria	
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Camp Camp	
Union	
Wethered (host wheely)	
200 Hotasi Funda	
Wooded Grandwide	

APPENDIX C: MASTER PLAN

Figure 25: Inanda Dam – Master Plan: Surface Water and Shoreline Figure 26: Inanda Dam Master Plan: Surface Water Figure 27: Inanda Dam Master Plan: Shoreline



Figure 25: Master Plan: Surface Water and Shoreline





Figure 26: Master Plan: Surface Water and Shoreline – Section 1



Figure 27: Master Plan: Surface Water and Shoreline – Section 2





Figure 28: Master Plan: Surface Water and Shoreline – Section 3





Figure 29: Master Plan: Surface Water



Figure 30: Master Plan: Surface Water – Section 1











Figure 34: Master Plan: Shoreline – Section 1



Figure 35: Master Plan: Shoreline – Section 2



Figure 36: Master Plan: Shoreline – Section 3

Appendix D: ACTION PLAN

No	Project name	Description Obj	ective Impleme	ntation Agent (s)	Estimated Budget	Priority	Y1	Y2	Y3	Y4	Y5
	Alien Plant and Pollu	tion Control									
1	Working for Water Initiative evaluation	Determine the success of current working water initiatives to eradicate water hyacinths, identify opportunities and constraints	To have the Inanda Dam and area surrounding the Dam free of alien vegetation	Msinsi, eThekwini, DWS	ТВА	В					
2	Removal of Water Hyacinths	Ensure that required resources are available for the removal of water hyacinths when action is required especially during December and January	To have the Inanda Dam and area surrounding the Dam free of alien vegetation	Msinsi, DWS	ТВА	A					
3	Survey of Invasive Alien Vegetation	Quantify an qualify the extent of invasive alien vegetation in order to have a baseline survey	To have the Inanda Dam and area surrounding the Dam free of alien vegetation	Msinsi, DWS	ТВА	А					
4	Problem plants removal campaign	Continuous removal of problem plants within the Dam boundary line	To have the Inanda Dam and area surrounding the Dam free of alien vegetation	Msinsi, DWS	ТВА	A					
5	Rehabilitation of infested areas	Rehabilitate infested areas with suitable endemic species	To have the Inanda Dam and area surrounding the Dam free of alien vegetation	Msinsi, DWS	ТВА	В					
6	Invasive plant monitoring	Continuous monitoring of occurrence of problem plants on the Dam surface and within the Dam boundary line	To have the Inanda Dam and area surrounding the Dam free of alien vegetation	Msinsi, DWS	ТВА	С					

									2/2		
No	Project name	Description Obj	ective Implement	ntation Agent (s)	Estimated Budget	Priority	Y1	Y2	Y3	Y4	Y5
	Allen Plant	Develop an inspection and	To have the Inanda Dam								
	containment	cleaning mechanism to	and area surrounding the								
7	mechanism	ensure that vessels	Dam free of allen	Msinsi, DWS	TBA	С					
		entering the Dam do not	vegetation								
		contaminate it with allen									
	Cultural Heritage Res	ource Management			[1					
	Grave sites survey	Confirm the presence of	To identify, acknowledge								
		the possible grave sites and	and conserve resources								
8		implement protection	of paleontological,	oThokwini	Тра	۸					
		measures	archaeological, historical,	emekwim	IDA	A					
			cultural and religious								
			significance								
	Management	Establish a relationship	To identify, acknowledge								
	procedure for faith	with the faith based	and conserve resources								
	based rituals	organisations and develop	of paleontological,	Mainai							
9		a procedure with regards to	archaeological, historical,	ivisinsi, oThokwini	TBA	А					
		the use of the Dam for	cultural and religious	emekwim							
		ritual activities	significance								
	SAHRA Co-	Formalise a relationship	To identify, acknowledge								
	operation	with the South African	and conserve resources								
10		Heritage Resource	of paleontological,	eThekwini	TBA	В					
		Authority (SAHRA)	archaeological, historical,								
			cultural and religious								
			significance								
	Ferry System		T . (1)							1	
	Ferry feasibility	investigate the possibilities	To improve access of the								
1.4	stuay	of offering this service as a	Dam through the	Msinsi,		6					
11		public system, run by the	establishment of a ferry	eThekwini	IBA	C					
		municipality or as a private	service								
		intiative									

			Inanda Dam Resource Manager	nent Plan							
No	Proiect name	Description Obj	ective Implemer	ntation Agent (s)	Estimated Budget	Priority	Y1	Y2	Y3	Y4	Y5
12	Operationalisation of ferry	Operationalisation of the ferry, including: Appointment of operator, Safety checks and Intialisation	To improve access of the Dam through the establishment of a ferry service	Msinsi, eThekwini	ТВА	С					
	Access Control										
13	Access control plan and policy	Pending the finalisation of the NDPW's vesting process, evaluate the development in terms of the Zoning plan and prepare and implement a development strategy	To enable broad public and private enjoyment of the water resource and surrounding State land through controlled authorised access and associated infrastructure development	Msinsi, eThekwini, DWS	ТВА	A					
	Sustainable Develop	ment									
14	Database of Tourism related and supporting facilities	Compile database of all tourism and related facilities	To promote sustainable development around the Dam	eThekwini	ТВА	A					
15	Tourism training programme	Develop training and support programmes	To promote sustainable development around the Dam	eThekwini	ТВА	В					
	Use Regulation	Γ	r		ſ	1					
16	Regulation of current surrounding uses	Embark on a project to evaluate the current use of the Dam basin and adjacent state and privately owned land and regularize unlawful usage	To evaluate the existing access and uses of the Dam basin and adjacent state and privately owned land to ensure that usage is lawful and that the necessary permits and authorisations are in place	Msinsi, eThekwini, DWS	ТВА	A					

No	Project name	Description Obj	ective Implemen	ntation Agent (s)	Estimated Budget	Priority	Y1	Y2	Y3	Y4	Y5
	Zoning										
17	Zone demarcation	Demarcate zones with buoys, and provide clear zonation maps at entrance and launch sites	Effective zonation and compliance aimed at unlocking the Dam's potential sustainably	Msinsi, DWS	ТВА	А					
18	Zonation compliance monitoring	Monitor compliance with zonation	Effective zonation and compliance aimed at unlocking the Dam's potential sustainably	Msinsi, DWS	ТВА	A					
	Access Roads and Fac	cilities			·	•					
19	Main access to read upgrading	Access road upgrading with associates sidewalk improvements (e.g. lighting)	To provide safe and upgraded public road access to the main entrance of the Dam area for both regular users and tourists	eThekwini	ТВА	В					
20	Secondary road maintenance	Maintenance of public access roads identified towards investment nodes	To provide alternative access routes to additional water access points and development nodes around the Dam	eThekwini	TBA	С					

No	Project name	Description Obj	ective Impleme	ntation Agent (s)	Estimated Budget	Priority	Y1	Y2	Y3	Y4	Y5
	Services						-				
21	Alternative sanitation solutions	Investigation and provision of either standards or infrastructure towards alternative bulk sanitation solutions in order to accommodate the nodal development around the Dam	To provide sufficient bulk infrastructure to the Dam area (especially investment nodes) in order to accommodate identified investment initiatives	eThekwini	ТВА	В					
	Local BEE	r	1		r						
22	Local BEE database	Compilation of a database of job seeking individuals and SMMEs from the local community and ensure that it is regularly updated and monitored	To ensure that local communities participate and benefit in local economic development initiatives occurring in and around the Dam	eThekwini	ТВА	A					
23	Skills development programme	Implement skills development programmes where opportunities exist	To ensure that local communities participate and benefit in local economic development initiatives occurring in and around the Dam	eThekwini	TBA	С					
24	BEE Policy on PPP projects	Ensure that BEE is attained in any PPP projects	To ensure that local communities participate and benefit in local economic development initiatives occurring in and around the Dam	Msinsi, eThekwini, DWS	TBA	В					

No	Project name	Description Obj	ective Implem	entation Agent (s)	Estimated Budget	Priority	Y1	Y2	Y3	Y4	Y5
	Safety and Security										
25	Security and safety plan	Provision of sufficient security and safety plan for public use areas of nodes along the Dam	A safe and secure environment within which recreational water use can take place	eThekwini	ТВА	В					
	Reparations										
26	Comprehensive verification of status of Reparation process	DWS to convene IGF meeting to clarify this matter	Obtain clarify regarding reparations	DWS	ТВА	A					
27	Reparation process feedback campaign	Communication campaign ensuring all stakeholders are clear on government's approach	Obtain clarify regarding reparations	DWS	ТВА	A					
	Management Boundary and Responsibility										
28	Management agreements	Agreements to be drafted	To implement co- management agreements where appropriate service contracts to unlock the economic and conservation potential of the Inanda Dam	Msinsi, eThekwini, DWS	ТВА	A					
29	Management Constitutions	Constitutions to be agreed upon	To implement co- management agreements where appropriate service contracts to unlock the economic and conservation potential of the Inanda Dam	Msinsi, eThekwini, DWS	ТВА	A					

No	Project name	Description O	bjective Implem	entation Agent (s)	Estimated Budget	Priority	Y1	Y2	Y3	Y4	Y5
	Catchment Management										
	DWS Regional										
30	office to provide				TBA						
	input										
	Intergovernmental Co-operation										
31	IGF functions formalised	Formalise relationship in terms of IGF RA	Unlocking the economic potential of the Dam requires a close working relationship between all spheres of government	Msinsi, eThekwini, DWS	ТВА	A					
	Industry Association										
32	Industry association working sessions	Convene working sessions between sporting and Industry Associations	Establishment of an association for all water sport users	eThekwini	ТВА	В					
	Co-management										
33	Co-management agreements	Compile co-management agreements between State and community structures	Equitable benefits and sharing of responsibilities between State and community structures	Msinsi, eThekwini, DWS	ТВА	A					