

Resource Management Plan **GOEDERTROUW DAM**

REPORT – Volume 4 of 5

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Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA



Prepared by:

ENGINEEREX (PTY) LTD

107 Haymeadow Street
Boardwalk Office Park
Faerie Glen
Pretoria
0043

Tel: 012 999 4900

Website: www.engineerex.co.za

Prepared for:

DEPARTMENT OF WATER AND SANITATION

Private Bag X313
Pretoria
0001

Tel: 012 336 7592

Fax: 012 324 6692

Website: www.dws.gov.za

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- Department of Water and Sanitation;
- Department of Environmental, Forestry and Fisheries;
- KwaZulu-Natal Department of Agriculture and Rural Development;
- KwaZulu-Natal Economic Development Tourism and Environmental Affairs;
- Umlalazi Local Municipality;
- Mthonjaneni Local Municipality;
- King Cetshwayo District Municipality;
- Traditional Authorities;
- Ward Councillors of Ward 27 of Umlalazi Local Municipality and Ward 06 of Mthonjaneni Local Municipality; and
- Community members of Mqokolweni, Ncemaneni, Eshowe, Mpushini, and Melmoth.

Acknowledgement is also extended to all other stakeholders who attended and participated in the various stakeholder engagements during the development of this plan.

TITLE AND APPROVAL PAGE

Recommended:

Name	Title	Signature	Date
Steven Nhlabathi	Project Manager: Infrastructure Build, Operate and Maintenance: Integrated Environmental Engineering (IBOM:IEE)		
Jabulani Maluleke	Director: IBOM: IEE		
Thembinkosi Mkhize	Director: Eastern Operations, IBOM		
Leonardo Manus	Chief Director: Infrastructure Operations, IBOM		

Approved:

Name	Title	Signature	Date
Leonardo Manus	Acting Deputy Director General: IBOM		

Review:

Review Period	Month	Year				
Annual Review of Business Plan (BP)	December	2021 ¹	2022	2023	2024	2025
Five (5) Yearly Review of Resource Management Plan (RMP)	December	2025				

¹The implementation of the RMP and BP requires one financial year planning ahead.

AMENDMENTS PAGE

Revision No	Description	Date
0	Draft RMP for DWS Review	14/01/2020
1	Draft RMP for Public Review	03/02/2020
2	Final Draft RMP for DWS Approval	23/03/2020
3	Final RMP for DWS Sign Off	26/03/2020

EXECUTIVE SUMMARY

Purpose of the Resource Management Plan: A Resource Management Plan (RMP) provides the principles and guidance within which the Dams must be used for recreational purposes. The principles and guidelines seek to promote community participation and beneficiation, environmental conservation as well as unlocking socio-economic opportunities associated with the recreational use of the Dam. This RMP is for Goedertrouw Dam (locally known as Lake Phobane), herein after referred to as the Dam, which is part of the Infrastructure Build, Operate and Maintenance (IBOM) Eastern Operations.

This RMP was developed in accordance with the Guideline on Integrated Resource Management Planning for the Use of Water for Recreational Purposes (DWAF, 2004) and in accordance with the requirements in Section 2, 26 and 113 of the National Water Act, 1998 (Act No. 36 of 1998) [NWA].

Mandate of Department of Water and Sanitation: The Department of Water and Sanitation (DWS), through the National Water Act, 1998 (Act No. 36 of 1998) [NWA], mandates the minister as the custodian of the nation's water resources. Part of the duties that the minister has are to ensure that the government waterworks (GWWs), including Goedertrouw Dam, are protected, used, developed, managed and controlled in a sustainable manner, to the benefit of present and future generation, as contemplated in Section 2 of the NWA. In fulfilling this mandate, the DWS initiated and commissioned the development of the RMP for the Dam.

A number of factors have prompted the need to compile a Resource Management Plan (RMP) for GWWs which amongst others, include the following:

Resource Management:

- The location of the Dam being in a protected area and thus also governed by legislation relating to its protected status;
- Presence and management of Invasive Alien species; and
- Water quality issues.

Recreational Industry Involvement:

- Conflict amongst users due the absence of a management tool;
- Public safety with regards to the use of inland vessels; and
- Uncontrolled developments within the Dam basin.

Community Participation and Beneficiation:

- Challenges of communities regarding physical access as well as access to the water-based economy of the resource;
- Participation and beneficiation of surrounding communities remains a challenge;
- Unlocking the economic potential of the Dam through the establishment of effective Public Private Partnerships (PPPs); and
- Equitable and sustainable benefit flow into the community through the creation of appropriate institutional arrangements.

Public Policy:

- The water resource should be identified as a local development objective in terms of an Integrated Development Plan (IDP) or Strategic Development Framework (SDF) for the relevant local and/or district municipalities. The zoning plan for the water resource must either be developed or updated.

In fulfilling this mandate Minister, the DWS initiated and commissioned the development of the RMP for the Dam.

Description and Location of the Dam: The Dam is an earth-fill dam that impounds the Mhlatuze River. The construction of the Dam was completed in 1982. At full capacity the Dam has a water surface area of approximately 1 200 hectares with a capacity of 301 million cubic meters.

The Dam is situated on the municipal boundary of Umlalazi Local Municipality (ULM) and Mthonjaneni Local Municipality (MLM) within the jurisdiction of the King Cetshwayo District Municipality (KCDM) in the KwaZulu-Natal Province of South Africa. The centre point co-ordinates of the Dam are 31°28'7"S and 28°46'22"E.

Purpose of the Dam: The primary purpose of the Dam is to provide bulk raw water for domestic, irrigation and industrial use. The Dam currently offers no recreational activities, however subsistence fishing has been reported.

Dam Ownership and Management: DWS owns and operates the Dam for its primary purpose. Currently there is no institutional structure managing the Dam for secondary (recreational) use. Through the process of developing the RMP, an appropriate Dam Management Committee (DMC) is proposed and shall be appointed by DWS to facilitate the implementation of the objectives and identified action projects in line with the requirements of the Goedertrouw Dam RMP on behalf of DWS.

Stakeholder Engagement: The success of the development and implementation of the RMP depends on the cooperation of all stakeholders both the Authorities and Interested and Affected Parties (I&APs). Authority and public meetings were conducted to obtain input (challenges and objectives) regarding the management and use of the Dam. These meetings were conducted in accordance with the DWAF Guidelines for Public Participation (2001) that outlines three broad phases for public participation namely the Planning, Participation and Exit phase.

Identified Objectives and Vision: During the authority and public meetings, issues and

concerns were raised from which the following objectives were identified:

- To find an acceptable solution in dealing with the graves under water;
- To investigate fencing the entire Dam in order to control access to the Dam and ensure safety of the people and livestock;
- To construct a wash bay to prevent the introduction and spread of alien invasive species into the Dam;
- To investigate the construction of a swimming pool since swimming in the Dam is prohibited due to the presence of hippos and crocodiles;
- To ensure public safety by improving security around the Dam;
- To investigate the removal of silt from the Dam;
- To promote sustainable subsistence fishing at the Dam;
- To revive the picnic area and tourism in general at the Dam;
- To conduct awareness programs to educate local communities about the importance of protecting and conserving water resources;
- To establish more compatible tourism development at the Dam (facilities and recreational activities);
- To investigate constructing water ponds near the Dam to supply water for irrigation and promote farming and livestock watering;
- To establish an effective and functional institutional structure inclusive of the community representatives to manage the use of water for recreational activities; and
- To uplift the local economy and increase benefit flow to the surrounding communities through meaningful community empowerment.

Vision: A 20-year vision for the Dam, formulated from the objectives identified by stakeholders, is as follows:

“To enhance public participation, beneficiation and empowerment with an aim to create a safe and secure environment in and around the Dam as well as to uplift the local economy by identifying and supporting potential tourism development”.

Tourism Potential The potential recreational developments identified to enhance tourist attraction includes:

- Refurbishment of the day visitor’s area;
- To revive the floating chalets and the animal park;
- To re-introduce hosting of bass fishing competitions; and
- Re-introduce the boat cruise.

The key challenges identified include:

- The Dam is fenced only around the Dam wall and associated infrastructure hence access control remains a challenge. The local communities use the access road from R66 that crosses over the Dam wall to get to their homesteads. This activity may lead to major injuries and drownings as the wall is not built to serve as a crossing bridge;
- The picnic area, ablution facility, guard house and the fence have all been vandalised;
- Lack of control of local community livestock that is grazing and drinking at the Dam;
- There is no management structure to oversee access and the potential recreational use of the Dam;
- The Dam is silted and the storage capacity is reduced due to silt deposits from upstream;
- There are agricultural fields and graves submerged under water within the DWS purchased boundary;
- There are no security guards at the Dam to monitor safety for potential recreational use;
- The poles to support the fence around the picnic area have been stolen and the fence is compromised;
- The Dam is a habitat to crocodiles;
- There have been two fatal incidences that occurred in the past at the Dam (boat

incident and drowning incident) that were reported;

- Game animals that were abandoned at the animal park (area previously managed as Community Conservation Area) were hunted and killed by community members to sustain their livelihood;
- Children continue to swim at the Dam when herding livestock and this is very risky due to the presence of crocodiles and this could potentially lead to crocodile attacks and drowning;
- Community members practice subsistence fishing regardless of the presence of crocodiles, this too is a safety risk but over and above that the fishing is not controlled;
- Effects of climate change specifically reduced rainfall negatively impacting on the availability of water in the Dam;
- Drought conditions in the past have led to the discontinuation of the bass fishing club from operating at the Dam; and
- Human–wildlife conflict: Livestock drink water from the Dam and graze on the banks of the Dam. There is a risk that they may drown as they try to reach for water in deeper areas. Also the risk of being attacked by the crocodiles exists.

Recommendations:

This RMP recommends the following immediate actions:

- Establishment of a Dam Management Committee (DMC) to oversee access and potential recreational use of the Dam;
- To avoid conflict amongst users, avoid uncontrolled development and to protect the water resource, the permissible and non-permissible activities on the water- and shoreline surface are delineated in the Zoning Plan and covered under Section 4.2; and
- To ensure public safety with regards to the use of inland vessels, the maximum level of recreational use the water resource can accommodate is covered under Carrying Capacity in section 4.2.3.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
TITLE AND APPROVAL PAGE.....	iii
AMENDMENTS PAGE	iv
EXECUTIVE SUMMARY	v
LIST OF ACRONYMS	xii
CHAPTER 1: INTRODUCTION	1
1.1 BACKGROUND.....	1
1.2 PURPOSE OF THIS RMP	1
1.3 DESCRIPTION AND LOCATION OF THE DAM	2
1.4 PURPOSE OF THE DAM	2
1.5 DAM OWNERSHIP AND MANAGEMENT	2
1.6 LEGISLATIVE FRAMEWORK.....	4
CHAPTER 2: ENVIRONMENTAL ANALYSIS.....	8
2.1 BIOPHYSICAL ENVIRONMENT.....	8
2.1.1 Climate	8
2.1.2 Topography	8
2.1.3 Geology and Soil	8
2.1.4 Hydrology	8
2.1.5 Flora.....	9
2.1.6 Fauna	9
2.2 BUILT ENVIRONMENT	9
2.2.1 On-site Facilities	10
2.2.2 Fencing	10
2.2.3 Management and Operation	10
2.2.4 Safety.....	10
2.3 SOCIO-ECONOMIC ENVIRONMENT	10
2.3.1 Cultural Aspects.....	17
2.3.2 Community Beneficiation	17
CHAPTER 3: RESOURCE MANAGEMENT PLAN PROCESS.....	18
3.1 DEFINITION OF RMP	18
3.2 PROCESS TRIGGERS	18
3.3 RMP DEVELOPMENT PROCESS	20
3.4 RMP PLANNING STAGES.....	21
3.4.1 Desktop Study	21

3.4.2	Site Inspection	21
3.4.3	Public Participation.....	21
3.4.4	Planning Partners	22
3.5	RMP DATA ANALYSIS.....	25
3.5.1	Encumbrance Survey (Phase 2)	25
3.5.2	SWOT Analysis and Objective Identification	26
3.5.3	Research/ Information Generation (Phase 4)	27
CHAPTER 4:	INTEGRATED RESOURCE MANAGEMENT PLANNING	29
4.1	INSTITUTIONAL PLAN	30
4.1.1	Implementing Agency (IA)	30
4.1.2	Dam Management Committee (DMC)	30
4.1.3	Agreements and Permits	32
4.1.4	Operations Management Committee (OMC)	33
4.1.5	National Project Steering Committee (NPSC)	33
4.2	ZONING PLAN.....	35
4.2.1	Water Surface Zoning	35
4.2.2	Shoreline Zoning.....	39
4.2.3	Carrying Capacity	44
4.3	STRATEGIC PLAN	45
4.3.1	KPA 1: Resource Management	46
4.3.2	KPA 2: Resource Utilisation	48
4.3.3	KPA 3: Benefit Flow Management.....	51
4.4	FINANCIAL PLAN.....	52
4.4.1	Potential Sources of Revenue.....	52
4.4.2	Target Market.....	52
4.4.3	Co-Funding	52
CONCLUSION AND WAY FORWARD		54
REFERENCES.....		56
APPENDICES.....		57
APPENDIX A	: STAKEHOLDER DATABASE REGISTER.....	57
APPENDIX B	: BACKGROUND INFORMATION DOCUMENT (BID)	57
APPENDIX C	: NEWSPAPER ADVERT	57
APPENDIX D	: FLYERS	57
APPENDIX E	: EMAILS	57
APPENDIX F	: COMMENT AND RESPONSES REGISTER.....	57

APPENDIX G	: EXAMPLES OF SUCCESSFULLY CO-FUNDED PROJECTS	57
APPENDIX H	: POTENTIAL CO-FUNDERS	57
APPENDIX I	: BUSINESS PLAN.....	57

LIST OF FIGURES

Figure 1: Locality Map for Goedertrouw Dam.....	3
Figure 2: Fluctuations of Goedertrouw Dam water level over a year	8
Figure 3: Turbid water	9
Figure 4: Vandalised braai facility.....	10
Figure 5: Umlalazi Local Municipality Ward 27 Boundary.....	12
Figure 6: Mthonjaneni Local Municipality Ward 06 Boundary.....	13
Figure 7: Educational Level for Ward 27 versus ULM.....	14
Figure 8: Educational Level for Ward 06 versus MLM.....	15
Figure 9: Individual Monthly Income for Ward 27 versus ULM.....	16
Figure 10: Individual Monthly Income for Ward 06 versus MLM.....	16
Figure 11: RMP Procedure.....	20
Figure 12: Integrated Resource Management Planning.....	29
Figure 13: Proposed DMC.....	31
Figure 14: Existing CD: IO MANCO.....	33
Figure 15: Proposed NPSC	34
Figure 16: Proposed Water Surface Zoning.....	38
Figure 17: Proposed Shoreline Zoning Map	42
Figure 18: Proposed Overall Zoning Map	43
Figure 19: RMP and BP Review Framework	55

LIST OF TABLES

Table 1: Goedertrouw Dam Profile	2
Table 2: Key Data Sources Used to Develop the RMP:	4
Table 3: Legislative Framework Applicable to the Management and Use of the Dam for Recreational Purposes	5
Table 4: Educational Level for Ward 27 versus ULM.....	14
Table 5: Educational Level for Ward 06 versus MLM	15
Table 6: Summary of triggers and potential challenges for Goedertrouw Dam	18
Table 7: Planning Partners and their Respective Mandates.....	23
Table 8: Summary of Biophysical, Legal and Socio-cultural Encumbrances	25
Table 9: SWOT Analysis for Goedertrouw Dam.....	26
Table 10: Proposed Water Surface Zoning Description.....	36
Table 11: Proposed Shoreline Zoning Description	40
Table 12: Area required per user	44
Table 13: Strategic Plan for KPA 1: Resource Management.....	46
Table 14: Strategic Plan for KPA 2: Resource Utilisation	48
Table 15: Strategic Plan for KPA 3: Benefit Flow Management	51

LIST OF ACRONYMS

AtoN	Aids to Navigation
B&B	Bed and Breakfast
BBBEE	Broad Based Black Economic Empowerment
BID	Background Information Document
BP	Business Plan
CATHSSETA	Culture, Arts, Tourism, Hospitality, Sports Sector, Education and Training Authority
CCA	Community Conservation Area
CD: IO MANCO	Chief Directorate: Infrastructure Operations Management Committee
CIWSP	Cooperative Inland Watercourse Safety Programme
CoGTA	Cooperative Governance and Traditional Affairs
DEA	Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries
DHS	Department of Human Settlement
DMC	Dam Management Committee
DoT	Department of Transport
DPW	Department of Public Works
DSR	Department of Sports and Recreation
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
ECC	Effective Carrying Capacity
EIA	Environmental Impact Assessment
FP	Financial Plan
FSL	Full Supply Level
GIAMA	Government Immovable Asset Management Act, 2007 (Act No.19 of 2007)
GP	Guideline Programme
GPS	Global Positioning System
GWWS	Government Waterworks
I&APs	Interested and Affected Parties
IA	Implementing Agency
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IBOM	Infrastructure Build, Operate and Maintenance
IDP	Integrated Development Plan
IEE	Integrated Environmental Engineering
IRMP	Integrated Resource Management Planning
KCDM	King Cetshwayo District Municipality
KPAs	Key Performance Areas
KZNDARD	KwaZulu-Natal Department of Agriculture and Rural Development
LAAP	Local Accountable Aton Parties
MLM	Mthonjaneni Local Municipality
MOA	Memorandum of Agreement
NDT	National Department of Tourism
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management Biodiversity Act, 2004 (Act No.10 of 2004)
NEMPAA	National Environmental Management Protected Areas Act, 2003 (Act No.56 of 2003)
NPSC	National Project Steering Committee

NT	National Treasury
NWA	National Water Act, 1998 (Act No. 36 of 1998)
OMC	Operations Management Committee
PCC	Physical Carrying Capacity
PFMA	Public Finance Management Act, 1999 (Act No.29 of 1999)
PP	Public Participation
PPP	Public Private Partnership
RCC	Real Carrying Capacity
RMP	Resource Management Plan
RMP	Resource Management Plan
SAMSA	South African Maritime Safety Authority
SAPS	South African Police Service
SASCOC	South African Sports Confederations and Olympic Committee
SDF	Spatial Development Framework
SWOT	Strengths, Weaknesses, Opportunities and Threats
ToR	Terms of Reference
ULM	Umlalazi Local Municipality
WMA	Water Management Area

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

The Department of Water and Sanitation (DWS), through the National Water Act, 1998 (Act No. 36 of 1998) [NWA], mandates the Minister as the custodian of the nation's water resources to ensure that the government waterworks (GWWs), including the Goedertrouw Dam, are protected, used, developed, managed and controlled in a sustainable manner and to the benefit of both the present and future generation as contemplated in Section 2 of the NWA.

A number of factors have prompted the need to compile Resource Management Plans (RMPs) for GWWs, which *inter alia* include the following:

Resource Management:

- Whether the water resource is situated within a protected area or not, and if yes would be subjected to protection by relevant legislation;
- The presence and management of Invasive Alien species; and
- Water quality issues.

Recreational Industry Involvement:

- Conflict amongst users due the absence of a management tool;
- Public safety with regards to the access and use of inland vessels; and
- Uncontrolled developments within Dam basin.

Community Participation and Beneficiation:

- Challenges of communities regarding physical access as well as access to the water-based economy of the resource;
- Participation and beneficiation of surrounding communities remains a challenge;
- Unlocking the economic potential of the Dam through the establishment of

effective Public Private Partnerships (PPPs); and

- Equitable and sustainable benefit flow into the community through the creation of appropriate institutional arrangements.

Public Policy:

- The water resource should be identified as a local development objective in terms of an Integrated Development Plan (IDP) or Strategic Development Framework (SDF) for the relevant local and/or district municipalities. The zoning plan for the water resource must either be developed or updated.

In fulfilling this mandate the Minister, the DWS initiated and commissioned the development of the RMP and its Business Plan (BP) for Goedertrouw Dam, hereafter referred to as the Dam.

1.2 PURPOSE OF THIS RMP

A Resource Management Plan (RMP) provides the principles and guidelines within which the Dam must be used for recreational purposes². The principles and guidelines seek to promote community participation and beneficiation, environmental conservation and unlocking socio-economic opportunities associated with the recreational use of the Dam. This RMP is for Goedertrouw Dam, herein after referred to as the Dam, which is part of the Infrastructure Build, Operate and Maintenance (IBOM) Eastern Operations.

This RMP is developed in accordance with the Guideline on Integrated Resource Management Planning for the Use of Water for Recreational Purposes (DWAF, 2004) for the Goedertrouw Dam, and to attain the objectives underlying sustainability in Section 2 of the NWA, with

² NWA Section 21 (k) Water Use - Using water for recreational purposes.

particular relevance to Section 26 and 113 relating to the use of water and access and use of government waterworks for recreational purposes.

1.3 DESCRIPTION AND LOCATION OF THE DAM

The Dam is an earth-fill type of dam which impounds the Mhlatuze River. The water surface area is approximately 1 200 hectares with a full capacity of approximately 301 million cubic meters. **Table 1** shows the dam profile.

The Dam is located on the demarcation boundary of Ward 27 of Umlalazi Local Municipality (ULM) and Ward 06 of Mthonjaneni Local Municipality (MLM). The ULM and MLM falls under the jurisdiction of King Cetshwayo District Municipality (KCDM) in the KwaZulu-Natal Province of South Africa as shown in **Figure 1**. The GPS coordinates are 31°28'7"S 28°46'22"E.

1.4 PURPOSE OF THE DAM

DWS owns and operates the Dam for primary purpose. The primary purpose of the Dam is to provide bulk raw water for irrigation, domestic and industrial use. The Dam currently offers no

recreational activities, however subsistence fishing has been reported.

1.5 DAM OWNERSHIP AND MANAGEMENT

DWS owns and operates the Dam for its primary use. Currently there is no institutional structure managing the Dam for recreational purposes. Through the process of developing the RMP, an appropriate Dam Management Committee (DMC), shall be appointed by DWS to facilitate the implementation of the objectives and identified projects in line with the requirements of the Goedertrouw Dam RMP on behalf of DWS.

Table 1: Goedertrouw Dam Profile

Goedertrouw Dam Profile	
Location	South Africa
Province	KwaZulu-Natal
District Municipality	King Cetshwayo
Local Municipalities	Umlalazi and Mthonjaneni
Completion Year	1982
Coordinates	31°28'7"S 28°46'22"E
Purpose	Irrigation, domestic and industrial use
Owner	DWS
Quaternary Catchment	W12B
Water Management Area	Pongola-Mzimkhulu
River	Mhlatuze
Capacity (Mm ³)	301
Surface area (ha)	1 200
Wall type	Earthfill
Wall Height (m)	88
Crest Length (m)	660

Source: Adapted from Department of Water and Sanitation (2016)

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

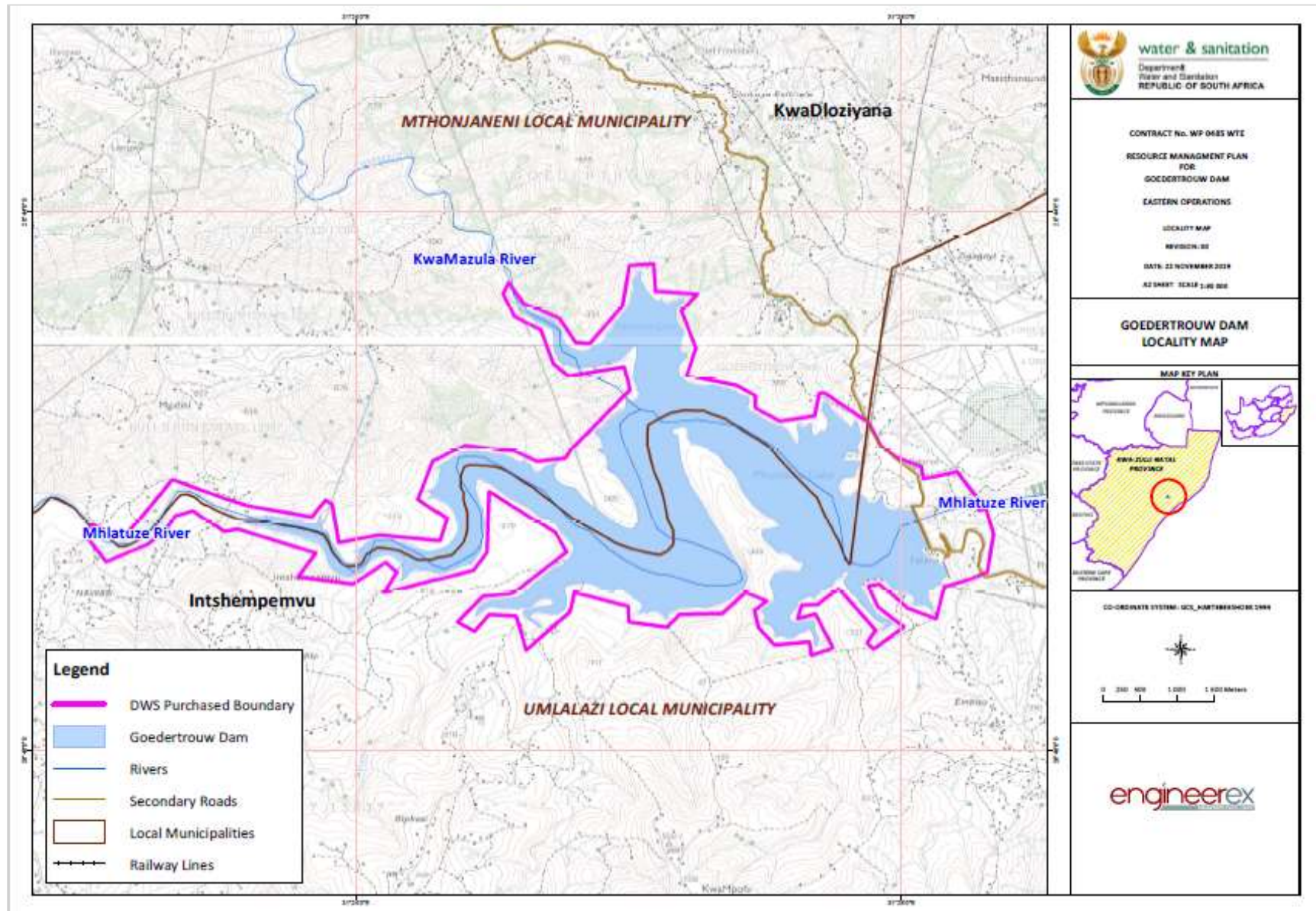


Figure 1: Locality Map for Goedertrouw Dam

1.6 LEGISLATIVE FRAMEWORK

Provided in the table below are the key data sources used to develop the RMP and the legislative framework applicable to the management and use of the Dam for recreational purposes.

Table 2: Key Data Sources Used to Develop the RMP:

Policy and Guidelines	Description
Consideration on Institutional Arrangement for Managing Use of Water for Recreational Purposes (DWAF, 2003)	"The guidelines illustrate various institutional options to institutionalise the management of recreational water use".
1st Draft National Inland Fisheries Policy Framework for South Africa. Department of Agriculture, Forestry and Fisheries, 2018	The Policy seeks to create an efficient regulatory regime for the inland fisheries sector in order to create an enabling environment to promote sustainable growth and transformation of the sector.
General Public Participation Guidelines (DWAF, 2001)	Public Participation refers to the ongoing interaction between Role Players and all stakeholders that is aimed at improving decision making during planning, design, implementation and evaluation of all projects within the state, this includes the proposed development of the RMP.
Government Notice R654 dated 1 May 1964, in terms of the Water Act, 1956 (Act No. 54 of 1956)	Regulates access and use of government waterworks for recreational purposes.
Guidelines for Compilation of Resource Management Plans (DWAF, 2006)	Directs and guides the development of RMPs by providing insight into the purpose and objectives of these plans, the procedure for its compilation and structure of such documents.
Guidelines for Compilation of Zoning Plans for Government Waterworks (DWAF, 1999)	The guidelines provides direction on the compilation of zoning plans for government waterworks within DWS purchased boundary.
Methodology for Carrying Capacity Assessment for the Use of Water for Recreational Purposes (DWAF, 2003)	The guideline documents a methodology to determine the maximum level of visitor/recreational use and related infrastructure that the water resource and surrounding area can accommodate.
National Treasury Public Private Partnership (PPP) Toolkit for Tourism, 2005	This toolkit assists the process of development of tourism-based businesses on State-owned Land. The Toolkit make it easier for Institutions and the Private Sector to enter into tourism related partnerships on State Property managed by National and Provincial Government Institutions.
Operational Policy: Using Water for Recreational Purposes (DWAF, 2004)	This policy is the main guideline in support of the RMP process with regards to the basic principles, policies, strategies and actions for regulating the use of water for recreational purposes.

The legislative framework applicable to the management and use of the Dam for recreational purposes is summarized in the table below.

Table 3: Legislative Framework Applicable to the Management and Use of the Dam for Recreational Purposes

Legislation: Acts, ordinances, bylaws	Relevance: Description
Constitution	Relevance:
Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996), Environmental Rights (Section 24)	<p>Section 24 – “Everyone has the right:</p> <ol style="list-style-type: none"> 1. to an environment that is not harmful to their health or wellbeing, 2. to have an environment protected for the benefit of present and future generations, through reasonable legislative and other measures that- <ol style="list-style-type: none"> a. prevent pollution and ecological degradation, b. promote conservation and secure ecologically sustainable development and use natural resources while promoting justifiable economic and social development.”
National Legislation	Significance to the RMP:
Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003)	“Aims to address inequalities resulting from the systematic exclusion of black people from meaningful participation in the economy.”
Communal Land Rights Act, 2004 (Act No. 11 of 2004)	“To provide legal security by transferring communal land to communities or by granting comparable compensation. Based on South Africa’s complex history most communities who used to reside in the vicinity of the Dams have been forcefully removed. During the implementation of the RMP it is essential to comply with the act where necessary.”
Conservation of Agricultural Resource Act, 1983 (Act No. 43 of 1983) [CARA]	<p>“Provides for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.”</p> <p>“Regulation 7 and 8 within the Act deals with the protection of wetlands and water courses, while regulations 15 and 16 deals with Alien Invasive Plant Species and bush encroachment.”</p>
1st Draft National Inland Fisheries Policy Framework for South Africa. Department of Agriculture, Forestry and Fisheries, 2018	In terms of the National Water Act (Act No. 36 of 1998), the Department of Water and Sanitation (DWS) is the custodian of South Africa’s water resources and is responsible for access to and the control of activities on Government waterworks (state dams) under its jurisdiction. As such, access to DWS government water works land for fishing activities is subject to DWS control. A system of RMPs is being implemented by the DWS to manage the activities of multiple user groups on public water works.
Government Immovable Asset Management Act, 2007 (Act No. 19 of 2007) (GIAMA)	“To provide for a uniform framework for the management of an immovable asset that is held or used by a national or provincial department; to ensure the coordination of the use of an immovable asset with the service delivery objectives of a national or provincial department; to provide for issuing of guidelines and

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

Legislation: Acts, ordinances, bylaws	Relevance: Description
	minimum standards in respect of immovable asset management by a national or provincial department; and to provide for matters incidental thereto."
Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000)	"To provide for the manner in which municipal powers and functions are exercised and performed; to provide for community participation; to establish a simple and enabling framework for the core processes of planning, performance management, resource mobilisation and organisational change which underpin the notion of developmental local government."
Merchant Shipping (National Small Vessel Safety) Regulations (2007)	"These Regulations provide <i>inter alia</i> for requirements for vessel safety; crewing requirements and responsibilities; controlled events such as competitions and regattas; and responsibilities of authorised agencies (governing boards/clubs/organisations and regulating authorities). These Regulations apply to the Department of Water and Sanitation as they are applicable to all inland and sheltered waters and as the Department and its agencies are allowing access to government waterworks for recreational boating vessels."
National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA]	"NEMA serves as South Africa's Environmental Framework Legislation. It was designed to provide for co-operative and Integrated Environmental Governance by establishing a general framework for decision-making on matters affecting the environment."
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) [NEMBA]	<p>"This Act aims to provide the framework, norms and standards for the conservation, sustainable use and equitable benefit-sharing of South Africa's biological resources."</p> <p>"The Alien and Invasive Species Regulations for this Act came into effect 01 October 2014. NEMBA together with these Regulations aim to prevent the introduction and spread of alien and invasive species across South Africa."</p>
National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) [NEMPAA]	"The aim of this Act is to provide for the protection and conservation of ecologically viable areas, which are representative of South Africa's Biodiversity, as well as natural landscapes and seascapes."
National Environmental Management: Waste Act, 2014 (Act No. 59 of 2008) [NEWA]	"Provides for the national domestic waste collection standards and national norms and standards for the storage of waste."
National Heritage Resources Act, 1999 (Act No. 25 of 1999) [NHRA]	"To nurture and conserve their heritage resources so that they may be hand down to future generation. To introduce an integrated system for the identification, assessment and management of the heritage resources of South Africa. All heritage sites and cultural artefact must be protected and should be demarcated in the RMP zoning map."
National Water Act, 1998 (Act No. 36 of 1998) [NWA]	"The purpose of the Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in a sustainable and appropriate manner, for the benefit of all. Furthermore Section 113 of the Act states that the water of a government waterworks and surrounding

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

Legislation: Acts, ordinances, bylaws	Relevance: Description
	state owned land may be made available for recreational purposes, subject to controls determined by the Minister and regulations made by the Minister."
Occupational Health and Safety Amendment (Act No. 181 of 1993G.15369 GoN. 2471)	"It requires the employer to bring about and maintain, as far as reasonably practicable, a work environment that is safe and without risk to the health of the workers. The workers and the employer must share the responsibility for health and safety in the workplace."
Public Finance Management Act, 1999 (Act No. 29 of 1999) [PFMA]	Section 76 of the Act "secures 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."
Safety at Sport and Recreational Events Act, 2010 (Act No. 2 of 2010)	"Events management is addressed by Safety at Sport and Recreational Events Act (Act No. 2 of 2010). This act deals with ensuring responsibility for safety and security at events. The act deals with <i>inter alia</i> responsibility for safety and security at the events, risk categorization of events and safety certificates."
South African Maritime Safety Authority Act, 1998 (Act No. 5 of 1998) [SAMSA]	"One of 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."
Water Services Act, 1997 (Act No. 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."
Municipal Policy, By-Laws, Reports & Guidelines	Significance to the RMP:
Umlalazi Local Municipality Draft IDP (2019 - 2020)	"The IDP is an overarching strategic tool that guides and informs all Planning and Economic Development, and decisions taken regarding planning, management and development within the municipality. Further to this, the IDP provides for effective performance monitoring, evaluation and measureable development frameworks with key performance areas, indicators and performance targets."
Mthonjaneni Local Municipality Final IDP-2 (2018 - 2019)	

CHAPTER 2: ENVIRONMENTAL ANALYSIS

2.1 BIOPHYSICAL ENVIRONMENT

2.1.1 Climate

Climate Data.ORG (n.d.), describes Eshowe's climate as warm and temperate. There is a great deal of rainfall in Eshowe, even in the driest month. The average annual temperature in Eshowe is 19.0 °C. The average annual rainfall is 1119 mm. Whilst South Africa is a relatively dry country with average annual rainfall of about 464 mm (compared to a global average of 860 mm).

Climate Data.ORG (n.d), further describes the climate in Melmoth as warm and temperate. Melmoth has a significant amount of rainfall during the year. This is true even for the driest month. The average annual temperature in Melmoth is 19.1 °C. The rainfall here averages 875 mm.

2.1.2 Topography

Where to stay (n.d), describes the area surrounding the Dam as a mountainous terrain

featuring massive cliffs up to three hundred feet high, which overlooks the water.

2.1.3 Geology and Soil

The KZN Biodiversity Sector Plan (2014), generally describes the soil covering the area around the Dam as usually shallow, on hard or weathering rock, with or without intermittent diverse soils. Lime is generally present in part or most of the landscape. The biodiversity sector plan further describes the soil as soil with minimal development.

2.1.4 Hydrology

Water Surface

The Dam lies within the W12B quaternary drainage which forms part of the Pongola-Mzimkhulu WMA. The Dam impounds the Mhlatuze River. **Figure 2** shows the fluctuations of water level over a year.

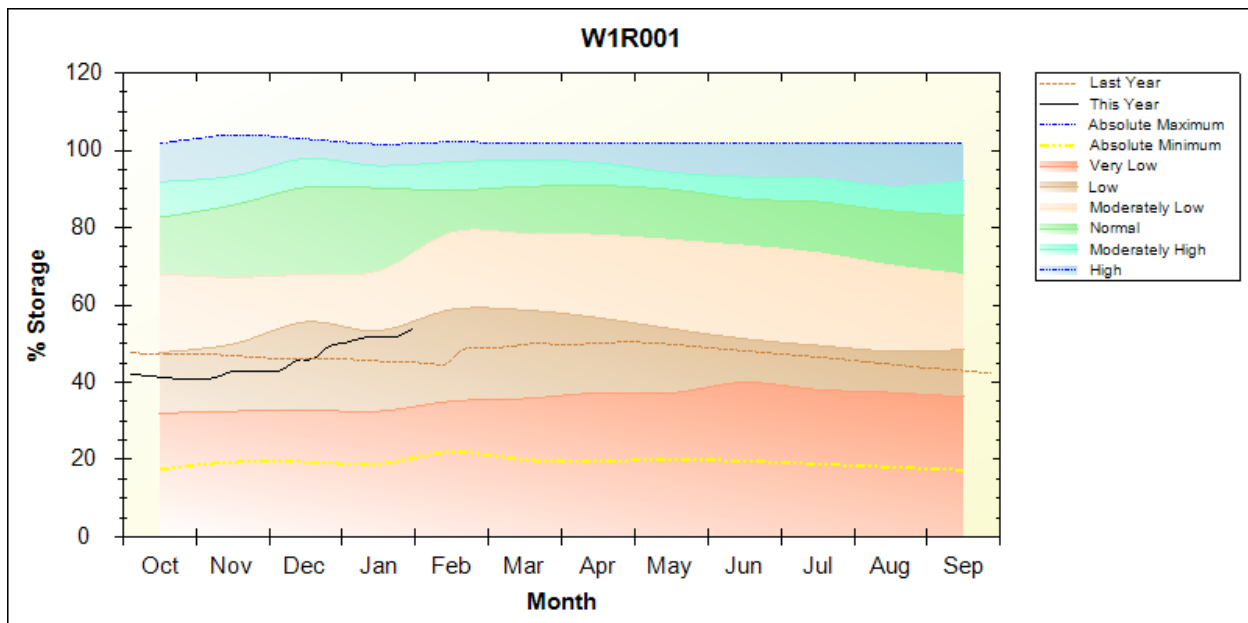


Figure 2: Fluctuations of Goedertrouw Dam water level over a year

Source: DWS, (2020)

As per **Figure 2**, the average storage level for the year 2019 was recorded at approximately 48% which is considered low. In 2020 the average storage capacity increased by approximately 5% to 53% compared to last year (this time). Climate change affects the possibilities or levels of rainfall which negatively impacts on the availability of water in the Dam. Hence, the demand to use water for recreational activities will depend on the Dam being on full supply level.

Water Quality

The term water quality is used to describe the physical, chemical, biological and aesthetic properties of water, all of which determine its fitness for use and its ability to maintain the health of aquatic organisms (DWAf, 1996).

When conducting the site inspection in September 2019, visually, the water in the Dam seemed to have lost its transparency as a result of silt deposits (mainly from soil erosion) into the Dam as shown in **Figure 3**.



Figure 3: Turbid water

The muddier the water seems the higher the turbidity. Turbidity is considered as a good measure for water quality. Turbidity is caused by suspended or dissolved particles in water. Particles can include sediment especially clay and silt, fine organic and inorganic matter, soluble colored organic compounds, algae and other microscopic organisms.

To determine the water's fitness for use other water quality parameters such as pH, e-coli etc. need to be tested. During the compilation of the report water quality data could not be made available.

DWS should conduct regular water quality tests in terms of the acceptable Target Water Quality Range (TWQR) in order to make a conclusive decision on the suitability of the water for recreational use. Hence, precautionary measures should be exercised for contact sports at the Dam.

2.1.5 Flora

The Dam falls within the Eastern Valley Bushveld where alien invasive plants are a serious threat with *Chromolaena odorata*, *Lantana camara* and *Caesalpinia decapetala* being the most problematic species (DWA, 2015). However, at the time of compiling this report there were no reported issues of invasive alien species at the Dam.

The shoreline vegetation around the Dam is threatened by overgrazing from the domestic livestock which may cause soil erosion. Soil erosion may increase the siltation problem in the Dam.

2.1.6 Fauna

The Dam is situated close to Mqokolweni, Ncemaneni and other communities where domestic livestock such as cattle, goat and sheep graze and drink water from the Dam. The Dam is also a known habitat to crocodiles. This poses a safety risk to both livestock and those that herd the livestock.

The Dam is renowned for large sized barbel and large-mouth bass fish. It was indicated that in the past there used to be a bass fishing club that was operating at the Dam. However, due to drought conditions it is no longer in operation.

2.2 BUILT ENVIRONMENT

The aspects that have been investigated consists of (and are presented under the following sub-headings):

- On-site facilities;
- Fencing;
- Management and operation; and
- Safety.

2.2.1 On-site Facilities

The existing facilities at the Dam includes:

- DWS offices;
- DWS staff house (no longer in use);
- Incomplete parking bay;
- Guard house;
- Water Purification Works;
- Overnight accommodation (in a state of despair);
- Vandalised braai stands;
- Ablution facility (vandalised and non-operational);
- 2x DWS slipways; and
- DWS boat house.

2.2.2 Fencing

The Dam is fenced only around the Dam wall and associated infrastructure, hence, access control is a challenge. In addition, the local communities use the access road from R66 that crosses over the Dam wall to get to their homestead. This leads to vandalism and theft of the existing facilities at the Dam (e.g braai facility) as shown in **Figure 4**.



Figure 4: Vandalised braai facility

2.2.3 Management and Operation

The management and operation of the Dam for primary purpose is done by DWS. Currently there

is no institutional structure managing the Dam for recreational use. Through the process of developing the RMP, an appropriate DMC is proposed for the management of the potential recreational use for this Dam.

There is not suitable, standardized and harmonized fixed and floating aids to Navigation (Aton) and Demarcation Markers in Place. Local Accountable Aton Parties (LAAP) and other bodies providing access to government waterways and watercourses have a responsibility to ensure that the required fixed and/or floating Aton are provided after obtaining the necessary support from the DWS and thereafter the permission by South African Maritime Safety Authority (SAMSA).

2.2.4 Safety

There is currently no specific incident management system in place to ensure that incidents are recorded and responded to in a co-ordinated manner. As part of the RMP process, the Incident Management Plan will be implemented to ensure that incidents are recorded and responded to.

As a result of uncontrolled access, the picnic area, ablution facility, guard house and the fence have all been vandalised. In addition to uncontrolled access, the Dam is a habitat to crocodiles. Local children continue to swim at the Dam when herding livestock and this is very risky, this could potentially lead to injuries and fatalities. If apart from the presence of crocodiles, if not properly trained the swimming could lead to drowning. Community members practice subsistence fishing regardless of the presence of crocodiles and this too is a safety risk.

2.3 SOCIO-ECONOMIC ENVIRONMENT

The purpose of assessing the socio-economic conditions is to determine matters that need to be addressed through the implementation of the RMP to uplift the standard of living of the communities. The study focuses on the socio-economic conditions of Ward 27 of ULM and Ward 06 of MLM, refer to **Figure 5** and **Figure 6** for the Municipal Ward Boundary.

The socio-economic conditions, according to the Stats SA Community Survey (2016), are summarised in the sub-sections as follows:

- Education level;
- Monthly income;
- Cultural aspects; and
- Community beneficiation.

Educational Level

The Stats SA Community Survey (2016), breaks down educational levels into each year of study. For the purpose of this report, the educational levels are grouped into primary, higher educational and no schooling categories. In Ward 27 (Ncemaneni), 30.1% of people within the ULM have secondary level education. Only 3.6% of people in the same ward have furthered their studies up to higher education level as illustrated in **Table 4** and **Figure 7**.

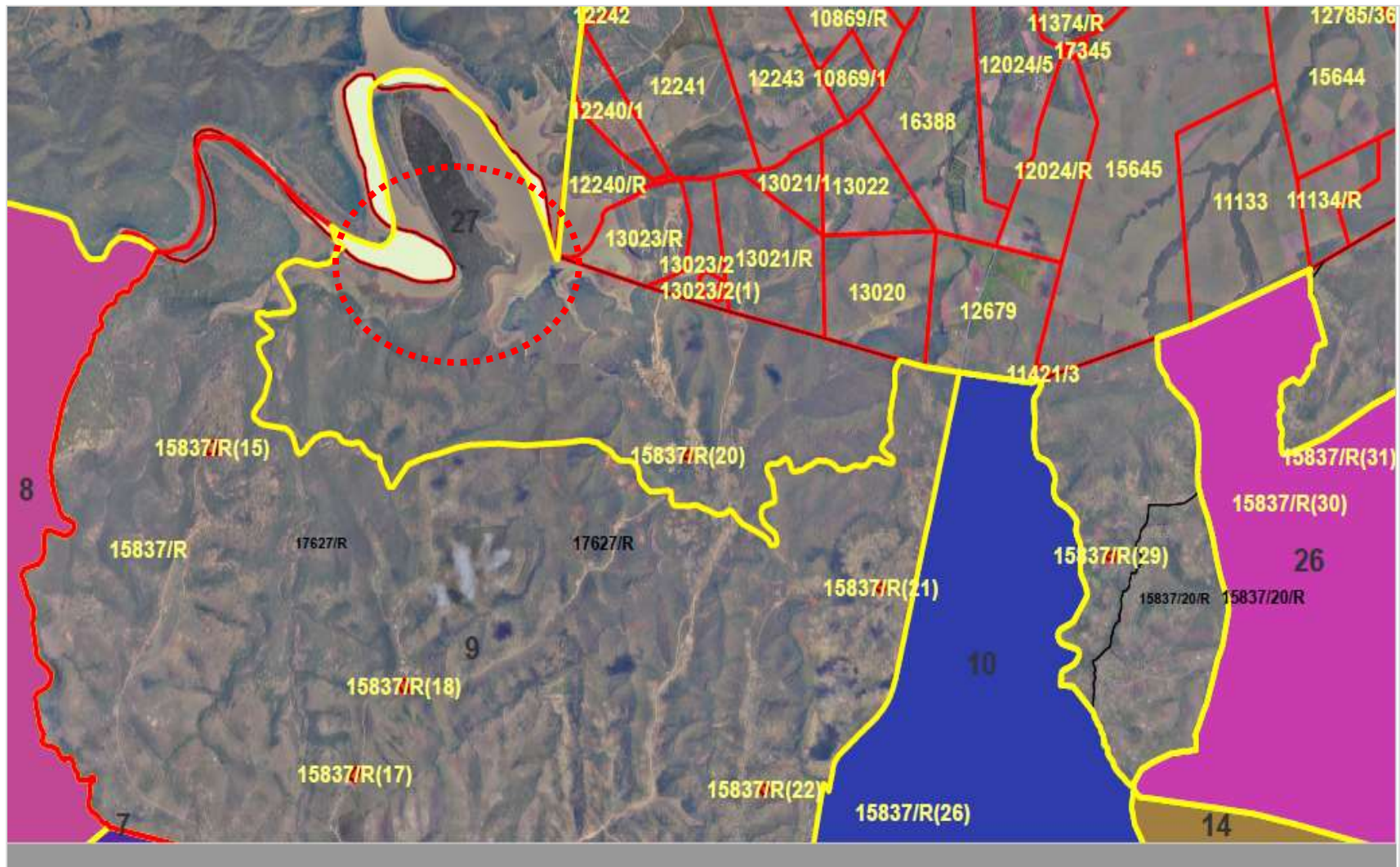


Figure 5: Umlalazi Local Municipality Ward 27 Boundary
Source: Umlalazi GIS Department (2019)

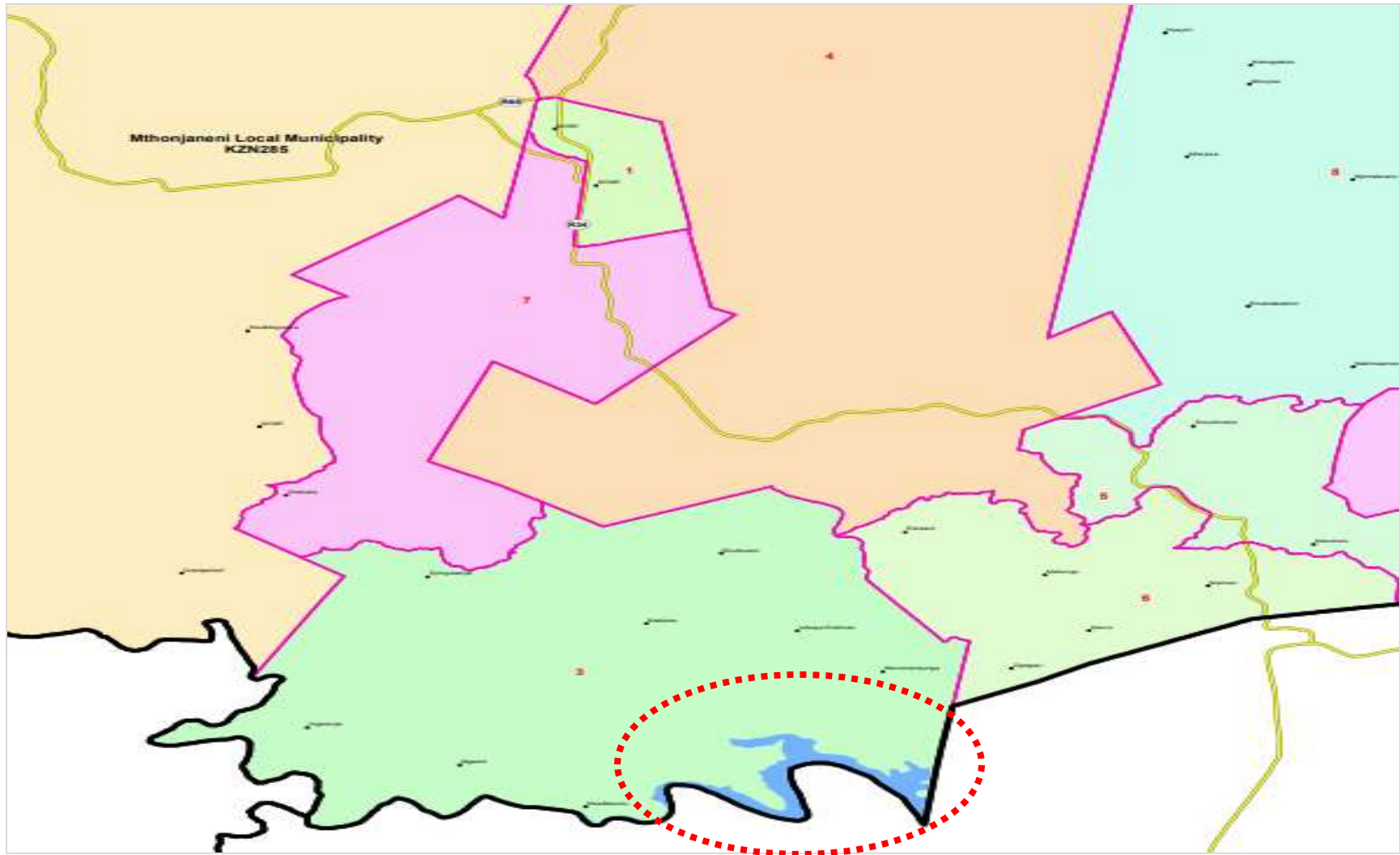


Figure 6: Mthonjaneni Local Municipality Ward 06 Boundary
Source: Ward Demarcation Boundary (2016)

Table 4: Educational Level for Ward 27 versus ULM

Description	Ward 27 (2016)	ULM (2016)
No Schooling	13.6%	4.1%
Some Primary	14.1%	45.4%
Completed Primary	5.3%	6.7%
Some Secondary	30.1%	31.8%
Completed Secondary	33.3%	11.2%
Higher Education	3.6	0.7%
Not Applicable	-	0.1%

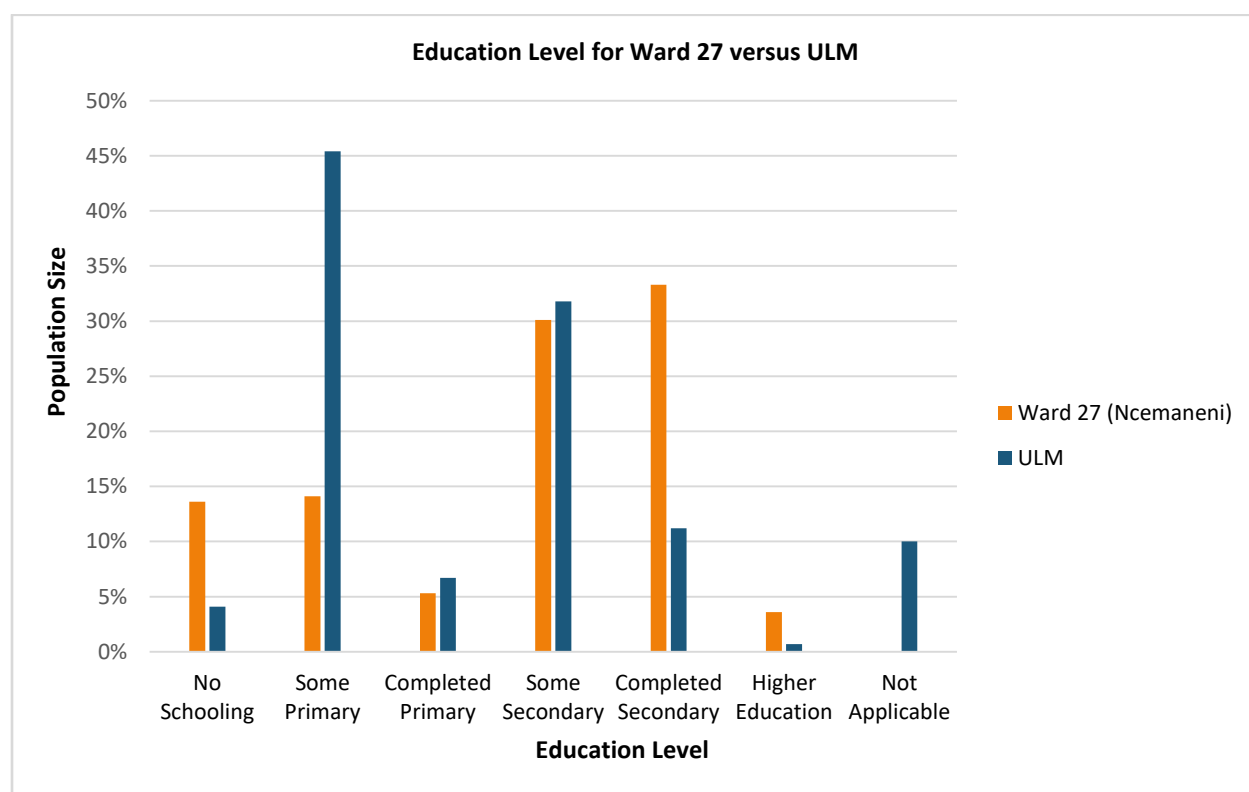


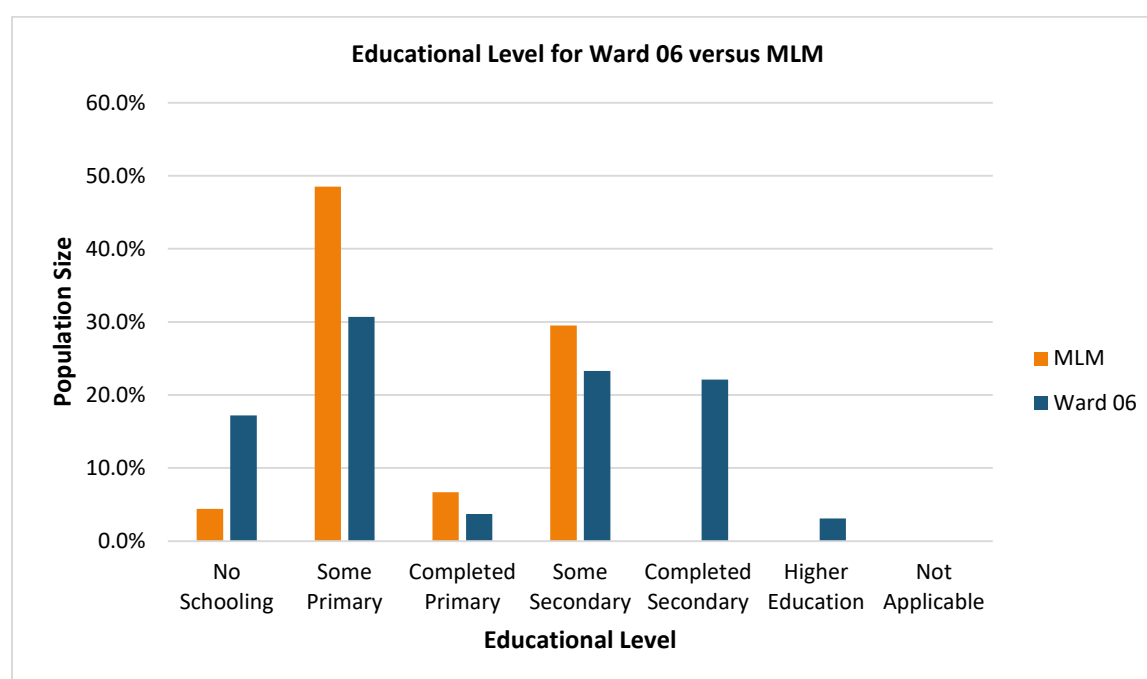
Figure 7: Educational Level for Ward 27 versus ULM

Source: Stats SA Community Survey (2016)

In Ward 06 (Mehlamasha) 23.3% people within MLM have received education up to the secondary level, and 3.1% of people in the same ward have received higher education as illustrated in **Table 5** and **Figure 8**.

Table 5: Educational Level for Ward 06 versus MLM

Description	Ward 06 (2016)	MLM (2016)
No Schooling	17.2%	4.4%
Some Primary	30.7%	48.5%
Completed Primary	3.7%	6.7%
Some Secondary	23.3%	29.5%
Completed Secondary	22.1%	10.3%
Higher Education	3.1%	0.6%
Not Applicable	-	0.1%


Figure 8: Educational Level for Ward 06 versus MLM

Source: Stats SA Community Survey (2016)

Monthly Income

Figures 9 and 10 show that in ward 27 (Ncemaneni) 8.4% of people within ULM receive no income. In ward 06 (Mehlamasha) of MLM 15.4% people do not have any source of income (Stats SA Community Survey, 2016). This then requires concerted and integrated efforts by the municipalities to create decent work and sustainable livelihoods for the people.

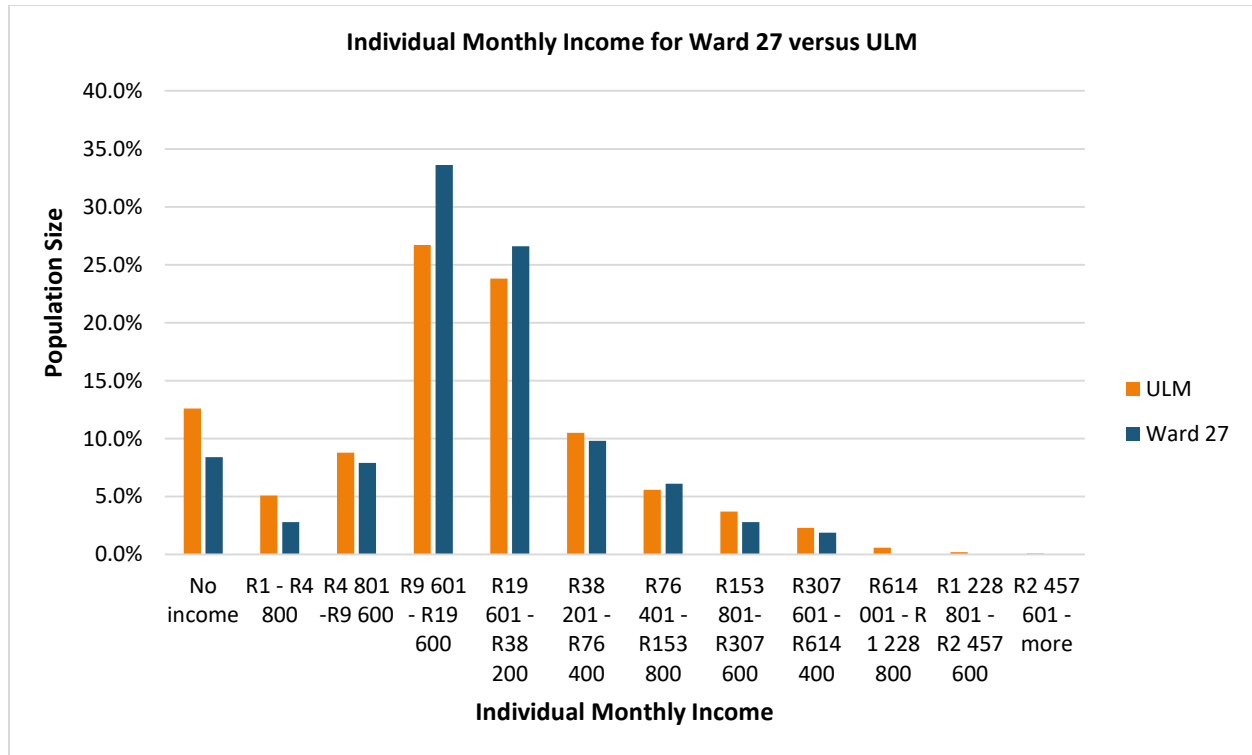


Figure 9: Individual Monthly Income for Ward 27 versus ULM
Source: Stats SA Community Survey (2016)

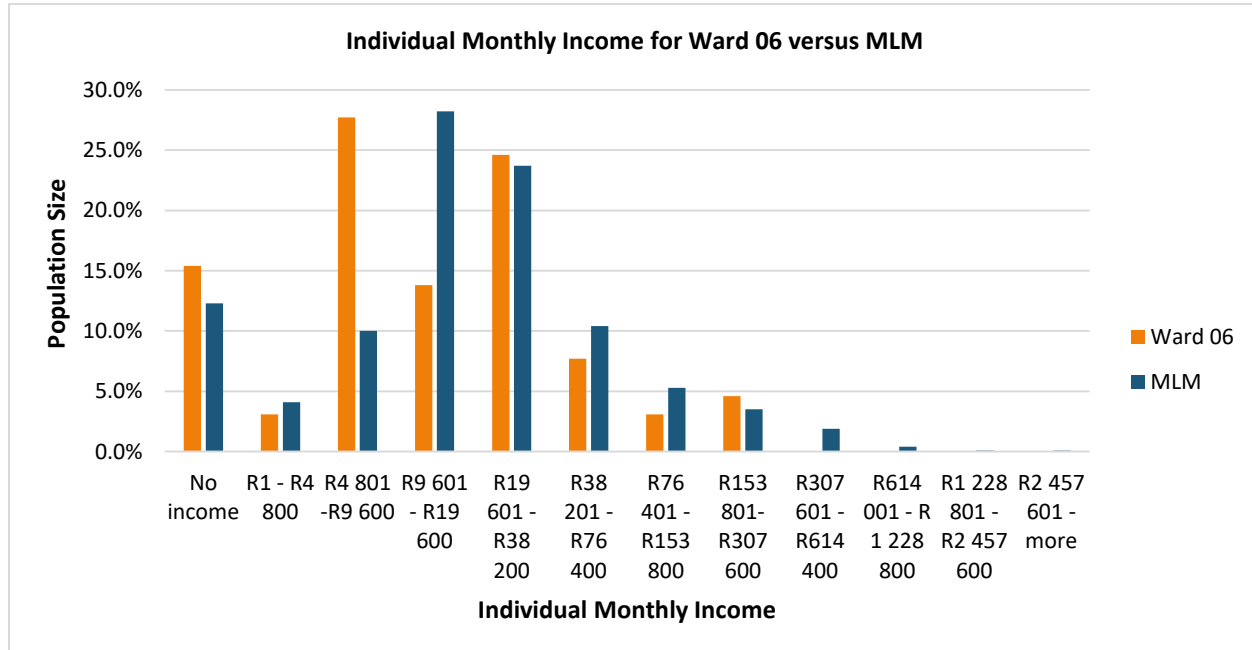


Figure 10: Individual Monthly Income for Ward 06 versus MLM
Source: Stats SA Community Survey (2016)

2.3.1 Cultural Aspects

There are agricultural fields and graves submerged under water within the DWS purchased boundary. DWS to find an acceptable solution in dealing with the graves under water.

2.3.2 Community Beneficiation

It is the DWS's policy that local communities should equally share the benefits emanating from the utilisation of the Dam for recreational purposes.

According to DWAF (2006), "it is important to ensure that communities have physical access to the resource, as well as access to the water-based recreation economy". This will ensure that the water resource remain protected for present and future generations.

Recreational angling sector has a substantial participation rate and a significant economic impact through the tourism sector and angling supply value chains. It is therefore important that recreational anglers are recognised as important stakeholders in South African inland fisheries and that their interests are recognised in future fisheries development initiatives.

The value chain associated with the recreational fishing sector has the potential to support rural food security through decent jobs, entrepreneurship and participation in the fishing linked tourism service sector.

In addition to the above, subsistence and small-scale fishing is widely practiced by rural community members to sustain their livelihoods. Furthermore, subsistence and small-scale fishing achieve the following objectives by promoting:

- Food security and production;
- Rural development;
- Job creation;
- Poverty alleviation; and
- Socio-economic development.

Involving the communities in the utilisation and management of the Dam will ensure that communities benefit through:

- Controlled access to the Dam;
- Safety while accessing and using the Dam;
- Being given first preference when there are employment opportunities and skills development through the Public Private Partnership (PPP); and
- Participating in decision-making with respect to major developments planned or proposed for the Dam through the DMC.

CHAPTER 3: RESOURCE MANAGEMENT PLAN PROCESS

3.1 DEFINITION OF RMP

A Resource Management Plan (RMP) is a tool which regulates access to and the recreational utilisation (secondary use) of a water resource and the surrounding state land, in ways that promote community participation and beneficiation, environmental conservation and the unlocking of socio-economic potential of the water resource.

Secondary use includes leisure, culture and religious activities. Although recreational use does not involve consumption of water, it is still a major water use and needs to be managed effectively with minimal detrimental environmental impacts.

3.2 PROCESS TRIGGERS

Process triggers are factors used to initiate the planning and public participation process in which stakeholder and potential Interested and Affected Parties (I&AP) are given an opportunity to comment or raise issues of concern that are relevant and site specific in line with the process triggers and potential challenges. Triggers for this Dam are detailed in **Table 6**.

The resource management planning process aims to achieve a common goal, identify site specific challenges and establish a set of objectives and projects to attain community participation and beneficiation, environmental conservation and the unlocking of socio-economic potential of the water resource.

Table 6: Summary of triggers and potential challenges for Goedertrouw Dam

Trigger (s)	Potential Challenge (s)
Resource Management	<p>Access Control</p> <ul style="list-style-type: none"> The Dam is fenced only around the Dam wall and associated infrastructure hence access control is a challenge. In addition, the local communities use the access road from R66 that crosses over the Dam wall to get to their homestead. This activity may lead to severe injuries and drownings. The Dam wall should never be used as a bridge as it is not designed for that purpose. The picnic area, ablution facility, guard house and the fence have all been vandalised. Lack of control of local community livestock that is grazing and drinking at the Dam. <p>Management Structure:</p> <ul style="list-style-type: none"> There is no management structure to oversee the potential recreational activities. The Dam is allegedly silted. <p>Cultural Aspects:</p> <ul style="list-style-type: none"> The poles to support the fence around the picnic area have been stolen, the fence is compromised.
Resource Utilisation	<p>Public Safety</p> <ul style="list-style-type: none"> There are no security guards at the Dam to monitor safety for recreational use. The poles to support the fence around the picnic area have been stolen. The Dam is a habitat to crocodiles.

Trigger (s)	Potential Challenge (s)
	<ul style="list-style-type: none"> • There have been two fatal incidences that occurred in the past at the dam (boat incident and drowning incident) that were reported. • Game animals that were abandoned at the animal park were hunted and killed by community members to sustain their livelihood. • Children continue to swim at the Dam when herding livestock and this is very risky due to the presence of crocodiles and this could potentially lead to injuries and fatalities. • Community members practice subsistence fishing regardless of the presence of crocodiles.
<p>Community participation and beneficiation</p>	<p><u>Community Participation and Beneficiation</u></p> <ul style="list-style-type: none"> • Local communities should be involved in managing and utilising the dam for recreational purposes. This will assist in ensuring that the dam is utilised in a sustainable manner and in a way that fulfills the interests of the community. • There is a cultural village on the southern shore of the Dam which is a main tourist attraction in Eshowe which can promote community beneficiation.

3.3 RMP DEVELOPMENT PROCESS

The RMP is developed in accordance with the RMP guideline procedure (DWAF, 2006) which stipulates the stages that needs to be adhered to as shown in **Figure 11**.

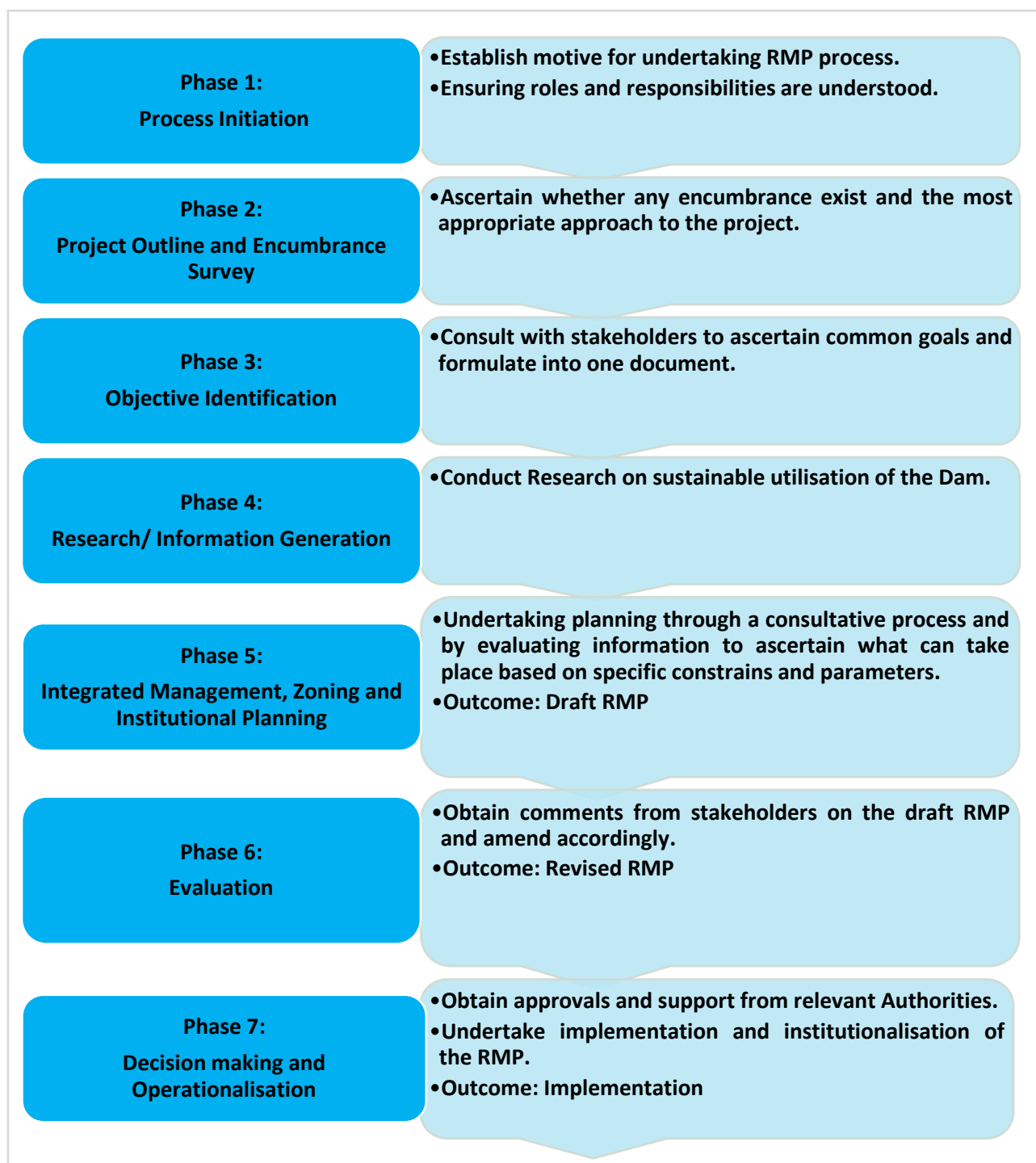


Figure 11: RMP Procedure

Source: Adapted from DWAF (2006)

3.4 RMP PLANNING STAGES

3.4.1 Desktop Study

A desktop study was conducted with the aim of acquiring background information about the Dam. This stage included the review of legislative and regulatory framework, decision-support tools, specialist reports, policies and guidelines, local and district municipal plans, biodiversity sector plans and integrated water information systems.

3.4.2 Site Inspection

A site inspection was conducted with the DWS officials (DWS IEE, Eastern Operations Champion and Dam Control Officer) on **26 September 2019**.

During the site inspection the following were observed: cultural village on the southern side of the Dam which is an attraction in Eshowe, dilapidated picnic area that is no longer in use, vandalised recreational facilities; lack of access control as the access road to the Dam from the R66 crosses over the Dam wall, and the communities use the same road to get to their homesteads; livestock grazing and drinking water from the Dam.

Additional background information was collated from consultation with different stakeholders. Some Interested and Affected Parties were identified during site inspection through liaison with the dam operator.

3.4.3 Public Participation

The Public Participation (PP) process is a process in which potential I&APs are given an opportunity to comment or raise issues of concern on specific matters. The three (3) fundamental and theoretical objectives of the PP process, as stipulated in the DWAF's Guideline for Public Participation (2001) are:

- To improve decision-making;
- To bring about sustainable development; and
- To normalise the attitudes of stakeholders, authorities and I&APs.

The PP process was conducted in order to obtain information for Phase 2 (Encumbrance Survey), Phase 3 (Objective Identification) and Phase 4

(Research/ Information Generation) from stakeholders, authorities and I&APs that was used to complete Phase 5 (Integrated Management, Zoning and Institutional Planning).

Stakeholder Database Register

Various stakeholders were identified and invited to participate in an open and consultative process. The stakeholder database was updated on a continuous basis throughout the RMP process (refer to **Appendix A**).

Advertising Process

The purpose of advertising is to notify the public about the proposed RMP project and to give the public an opportunity to register as I&APs.

The following advertising methods were used:

- **Newspaper Advert:** A Newspaper advert regarding the RMP project was placed in the **Eyethu Bay Watch**. The advert invited the public to attend the Public Participation Meetings. The advert was published in English on **16 October 2019**. The draft RMP presentation advert was published on **Eyethu Bay Watch** on **05 February 2020** (see attached **Appendix C**).
- **Flyers and Onsite Notices:** Flyers and onsite notices were compiled in English and isiZulu and were distributed on **08** and **09 October 2019**. For the draft RMP presentation, the flyers and the draft RMPs were distributed on **03 February 2020** (refer to **Appendix D**).

Consultation and Engagement

Consultation with stakeholders shall continue until the approval of the RMP.

The following consultation and engagement methods were used:

- **E-mails:** Initial meeting invitations were sent to stakeholders on **14 October 2019**, notifying them about the scheduled consultative meetings. The meeting invites for the draft RMP presentation were sent on **02 February 2020** (refer to **Appendix E**).

- **Background Information Document (BID):** The BID was sent to stakeholders *via* email with background information about the proposed RMP project (refer to **Appendix B**).
- **Authority Meeting:** The initial authority meeting was held on **28 October 2019** at the **King Cetshwayo District Municipality: Council Chamber**. The draft RMP was presented on **17 February 2020** at **King Cetshwayo District Municipality: Council Chamber**. The purpose of the meeting was:
 - To present the RMP, its goal and the objectives to the authorities; and
 - To allow the authorities an opportunity to participate in the project by sharing information on their respective mandates.
- **Public Meeting:** The initial public meetings were held on **27 and 29 October 2019** at **Mqokolweni and Mpushini Town Hall**. The public meeting that was initially scheduled on **27 October 2019** at **Ncemaneni** could not be held due to a funeral service that took place on the same date of the planned meeting. In paying respect to the affected family the meeting was postponed to **17 November 2019**. The draft RMP was presented on **16, 17 and 18 February 2020** at **Mqokolweni, Ncemaneni and Eshowe**.
- **Comment and Responses Register:** Copies of the draft RMP were circulated on **03 February 2020** for public review. The commenting period lapsed on **28 February 2020**. The comments received were documented in the Comments and Responses Register (refer to **Appendix F**).

specific to the Dam. Both the proposal regarding the institutional structure and the management plan are consolidated into a RMP, which will serve as guide for the development and management of the water resource for recreational use.

In order to successfully complete the RMP, it is essential that the information obtained in the previous phases is utilised as planning input. The RMP provides for coordination between different government departments and agencies as shown in **Table 7**. This is to ensure that not only the objectives of DWS are achieved but also that the functions/ objectives of the planning partners (relating to the recreational use of the Dam) are taken into consideration when developing the RMP.

3.4.4 Planning Partners

The RMP Process addresses both the institutional structure required to effectively manage the water resource, as well as the site planning parameters (environment, community and visitor) resulting in a management plan

Table 7: Planning Partners and their Respective Mandates

Department	Functions / objectives
King Cetshwayo District Municipality	The Dam is within the jurisdiction of the KCDM which is the Water Service Authority. The Local Economic Development (LED) unit within KCDM primary focus is to improve <i>inter alia</i> the tourism sector. The main purpose for LED is to support economic development initiatives that will empower the community, create job opportunities, minimise income leakages and growth by building partnerships within relevant stakeholders in order to create a conducive environment for job creation.
Department of Environment, Forestry and Fisheries (DEFF)	The purpose of the DEFF includes sustainable development and management of resources to maximise the economic potential of the fisheries sector while protecting the integrity and quality of the country's aquatic ecosystems. Operation Phakisa's expansion to inland Dams is one of the DEFF's initiatives aimed at unlocking the economic potential of the fisheries sector of inland water. The latter programme will be used as a benchmark for the implementation of conservation policies, while implementing job creation in the fishery and fish processing market.
Department of Environmental Affairs (DEA)	The DEA is mandated to give effect to the right of citizens to an environment that is not harmful to their health or wellbeing, and to have the environment protected for the benefit of present and future generations. In relation to the RMP, the DEA is responsible for biodiversity management within the GWWs, including invasive alien species. In addition, the Department should ensure that Environmental Impact Assessments (EIAs) is undertaken for all activities that triggers EIA Regulations. The DEA through the WfW programme, can assist in eradicating alien invasive plants species (blue gums and parrot furthers) and alien invasive fish species.
Department of Public Works (DPW)	The DPW is tasked with the function to regulate and control the use of state land outside the GWWs.
Department of Rural Development and Land Reform (DRDLR)	The Department will assist in terms of land claims/ ownership issues (i.e. land under traditional authorities). The Department are also involved in rural development by improving both economic infrastructure (such as roads) and social infrastructure (e.g. communal sanitation and non-farming activities).
Department of Transport (DoT)	Responsible for legislation, policy and regulations for all transportation in South Africa, including shipping and other transport by water, and inland waterways. For the purpose of Inland Waterways, DoT has established an agency called the South African Maritime Safety Authority (SAMSA). SAMSA has been charged with the responsibility of executing the administration of the Merchant Shipping (National Small Vessel Safety) Regulation, 2007 (as amended). The Regulations extends SAMSA's core mandate to include inland waterways accessible to the public within the Republic, to ensure boating safety on our waters.
National Treasury (NT)	The use of state assets is governed by National Treasury Regulations, requiring the DWS to plan concessions in compliance or association with the National Treasury, guided by the Tourism Public Private Partnership (PPP) Toolkit of 2005.
Cooperative Inland Watercourse Safety Programme (CIWSP)	The CIWSP is the programme under DWS and is supporting a multi-departmental working group that is developing an innovative approach to inland water and safety integrity. The project, was initiated out of the need to find an innovative,

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

Department	Functions / objectives
	<p>practical and cost-effective way to implement SAMSA' Vessel Safety Regulations on inland watercourses and to implement responsible water use within the broader socio-economic context of the country.</p> <p>The CIWSP is a partnership between multiple government entities and between the Government and communities. The main aim of the project is to enhance the development of a best practice model to ensure safe and structured inland maritime environment and culture, whilst protecting the country's precious water resource.</p>
Culture, Arts, Tourism, Hospitality, Sport Sector, Education and Training Authority (CATHSSETA)	CATHSSETA deals with the approval and financing of training relating to the culture, hospitality, tourism and sport sectors.
Department of Corporate Governance and Traditional Affairs (CoGTA)	Its function is to develop national policies and legislation with regard to provinces and local government, and to monitor their implementation. Another function of the Department is to support provinces and local government in fulfilling their constitutional and legal obligations
Department of Basic Education (DBE)	The function of the DBE is to develop, maintain and support a South African school education system. In this regard, the DBE can collaborate with nature reserves that encompasses GWWs, in order to provide an opportunity for school environmental tours, as this can also have influence on career options.
Department of Sports and Recreation (DSR)	The Department is mandated to promote and develop sport and recreation activities and also to co-ordinate the relationships between the sports commission, national and recreational federations and other agencies.
Department of Tourism (NDT)	The Department is mandated to create conditions for the sustainable growth and development of tourism in South Africa. The Tourism Act makes provision for the promotion of tourism to and in the Republic and for regulation and rationalisation of the tourism sector, including measures aimed at the enhancement and maintenance of the standards of facilities and services utilised by tourists; and the co-ordination and rationalisation of the activities of those who are active in the tourism sector.
South African Police Service (SAPS)	The South African Police Service has been entrusted with the responsibility of creating a safe and secure environment for all people in South Africa, as well as preventing anything that may threaten the safety or security of any community. Hosting of recreational events must comply with the Safety at Sports and Recreational Events Act, 2010 (Act No. 2 of 2010).
South African Sports Confederation and Olympic Committee (SASCOC)	SASCOC is mandated to promote and develop high performance in sports, as well as to act as a controlling body for sports in South Africa. It can also assist in coordinating organised events at the Dam.

3.5 RMP DATA ANALYSIS

3.5.1 Encumbrance Survey (Phase 2)

The purpose of the encumbrance survey is to investigate/ascertain whether any impediments exist around the development and implementation of the RMP for the Dam.

The survey also identifies the information that is required for effective decision-making regarding the RMP (DWAF, 2006).

The identified encumbrances are categorized into Biophysical, Legal and Socio-cultural. **Table 8** summarises the identified biophysical, legal and socio-cultural encumbrances/ limitations, that might affect the development or implementation of the RMP for the Dam.

Table 8: Summary of Biophysical, Legal and Socio-cultural Encumbrances

Item	Description
Climate	<ul style="list-style-type: none"> Climate change affects the possibilities or levels of rainfall which negatively impacts on the availability of water in the Dam. If the drought persist it will be impossible to implement the RMP for the Dam. The bass fishing club that was operating at the Dam in the past is no longer in operation due to drought conditions.
Flora	<ul style="list-style-type: none"> The shoreline vegetation around the Dam is threatened by overgrazing from the domestic livestock which may cause soil erosion. Soil erosion may increase the siltation problem in the Dam.
Fauna	<ul style="list-style-type: none"> Human–wildlife conflict: Livestock drink water from the Dam and graze on the banks of the Dam. There is a risk that they may drown as they try to reach for water in deeper areas. The risk being attacked by the crocodiles. Children continue to swim in the Dam whilst herding livestock and this is very risky due to the presence of crocodiles and this could potentially lead to crocodile attacks and drowning.
Geology and soil	<ul style="list-style-type: none"> The silt deposits from upstream reduces the storage capacity of the Dam and the issue needs to be urgently addressed since South Africa is a water scarce country.
Hydrology	<ul style="list-style-type: none"> Due to insufficient rains in the KZN area the operating limits at the Dam are applied from time to time by DWS. According to (DWS, 2020), the Dam level is low, and the demand to use water for recreational activities will depend on the Dam being on full supply level.
Expectations	<ul style="list-style-type: none"> If the community expectations are not better managed the community may become negative towards the RMP implementation phase.
Education Level	<ul style="list-style-type: none"> In ward 27 of ULM there are no people who have furthered their studies up to higher education level. Whereas, in Ward 06 of MLM only 13.9% of people have furthered their studies up to higher education level. The implication in the project is that the majority of residents in the aforementioned wards will not have received any kind of training to become active participants in the tourism sector.
Monthly Income	<ul style="list-style-type: none"> Ward 27 of ULM has 0.9% of people and ward 06 has 17.4% people receiving no sources of income which will result to a lack of community participation in the tourism developments at the Dam. The majority of residents receive middle level income and are living below the poverty datum line, representing a standard of living attained by a person to be deemed poor.
Cultural Aspects	<ul style="list-style-type: none"> The potential recreational use of the Dam in the affected area is compromised by the presence of graves. Communities' beliefs are affected as they cannot perform rituals.

	<ul style="list-style-type: none"> Affected families are expecting to be compensated for the force removal that took place for the construction of the Dam.
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3.5.2 SWOT Analysis and Objective Identification

Engineerex Pty Ltd as the process facilitator conducted the Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis. This

was done to determine the **Strengths** and **Opportunities** that define the potential of the Dam whereas the challenges regarding the Dam were identified through **Weaknesses** and **Threats**. Refer to **Table 9** for the SWOT analysis.

Table 9: SWOT Analysis for Goedertrouw Dam

Strengths	Weaknesses
<ul style="list-style-type: none"> There are no aquatic weeds at the Dam. There is a variety of butterflies at the Dam. Boats cruises reaching the creek (river inlet) can see the beautiful view of the Dam. Bird life can increase due to the abundance of habitat and food. Supplies the communities with water for domestic use through the municipality. Some members of the community have registered close-cooperation companies specifically for farming and agricultural activities. Livestock (especially cattle) are drinking from the dam. 	<ul style="list-style-type: none"> Access road to the Dam is in a bad condition. The road is tarred up to Shakaland. Safety at the Dam is a concern. Incidences of livestock and children drownings have been reported. Lack of water supply for irrigation. Subsistence fishing is limited at the dam due to the presence of crocodiles. Contractors who get to work at the dam prevent the community members from using water at the dam. Subsistence farming is limited due to the lack of water supply for irrigation. Subsistence farmlands were destroyed during the construction of the dam. Agricultural fields and graves are submerged by water within the DWS purchased boundary.
Opportunities	Threats
<ul style="list-style-type: none"> Avitourism for bird enthusiasts. Overflow of tourists can be accommodated at Shakaland as it is in close proximity to the Dam. Community members can be trained as tour guides (site or environment guides). Engagement with crafters to display their art work at the Dam. Fishermen to supply hotels/ lodges to be built with fresh fish caught from the Dam. The structure of the current existing picnic facilities is still in good condition for future use. Fishing competitions can be hosted at the dam. Northern side of the Dam is good for camping. Research can be conducted on endemic species that are or can be found at the Dam. Investigation of possible sand mining. Establishment of hotels to attract tourists. There is a great tourism potential. Economic opportunities such as appointments of security officers to oversee access and recreational use of the dam. 	<ul style="list-style-type: none"> Lack of public participation. Theft and vandalism. Presence of crocodiles. Drowning incidences. Drought.

- Developments such as braai areas and facilities.
- Refurbishment of existing tourism facilities.
- Registration of more cooperatives specifically for subsistence farming.
- Interest in farming requires an area close to the dam to conduct such farming activities.
- Local communities must be the first to benefit on any job opportunities associated with the dam (office work, rehabilitation works, construction works and EPWP).

Key objectives were formulated from the identified **Strengths** and **Opportunities** of the Dam.

The vision and key performance areas (KPA) for the Dam for a period of 20-years was formulated from the key objectives, discussed in the paragraphs to follow.

KPA 1: Resource Management

- To find an acceptable solution in dealing with the graves under water;
- To investigate fencing the entire Dam in order to control access to the Dam and ensure safety of the people and livestock;
- To construct a wash bay to prevent the introduction and spread of alien invasive species into the Dam;
- To investigate the removal of silt from the Dam; and
- To establish an effective and functional institutional structure inclusive of community representative to manage access and recreational use of the Dam.

KPA 2: Resource Utilisation

- To ensure public safety by improving security around the Dam;
- To investigate the construction of a swimming pool since swimming in the Dam is prohibited due to the presence of crocodiles;
- To promote subsistence fishing at the Dam;
- To revive the picnic area and tourism in general at the Dam;

- To conduct awareness programmes to educate local communities about the importance of protecting and conserving water resources; and
- To establish more compatible tourism facilities (B&Bs, resource centres) and recreational activities such as cruise boating.

KPA 3: Benefit Flow Management

- To investigate constructing water ponds near the Dam to supply water for irrigation and to promote farming and livestock watering; and
- Uplift the Local Economy and increase Benefit Flows to the surrounding communities through meaningful community empowerment.

Action projects required to achieve these objectives are discussed in **Section 4.3 (The Strategic Plan)**.

A 20 year vision for the Dam, formulated from the objective identified by the stakeholder, is as follow:

“To enhance public participation, beneficiation and empowerment with an aim to create an safe and secure environment in and around the Dam as well as to uplift he local economy by identifying and supporting potential tourism development”.

3.5.3 Research/ Information Generation (Phase 4)

The main aim of the research was to identify the Dam’s tourism development potential and to

evaluate the practicality/ feasibility of the identified objectives.

Tourism Development Potential

On the southern side of the Dam, there is a cultural village which is an attraction in Eshowe. It pays homage to the Zulu nation's history, explores its contribution to modern society, and allows visitors from all four corners of the planet to experience this culture. The village offers overnight accommodation, arts and craft displays, cultural tours, bird watching and hiking trails. Within the cultural village there is a King Shaka's kraal, overlooking the Goedertrouw Dam. In the past the cultural village offered a boat cruise on the Dam, however that activity has since been discontinued.

There was a privately owned lodge operating on the southern shore of the Dam. This site was managed as the Mhlathuze Community Conservation Area (CCA). Guests would experience an adventure after leaving their vehicles on the northern shore under 24hours guard, to enjoy a 10 minutes scenic boat cruise across the water to the lodge. In addition to the boat cruise there were also floating chalets that were a biggest tourist attraction. Functions such as weddings would be hosted at the lodge, however, the lodge no longer retains the status and is no longer in operation.

It was indicated that within the CCA there was an animal park, however, due to unknown reasons the park and the game animals were abandoned. The abandoned game animals were allegedly hunted by the community members to sustain their livelihood. The bass fishing club that was also operating at the dam is no longer in operation due to drought conditions.

According to the tourism perspective in King Cetshwayo District, Mthonjaneni and Umlalazi Local Municipalities the dam has a huge tourism potential. There are interested parties who engage the municipalities with plans aiming to revive the facilities at the Dam.

Practicability/ Feasibility of Potential Objectives:

According to the DWAF (2006), the feasibility of the proposed objectives needs to be determined prior to the RMP implementation. Based on the desktop study done for the Dam, not all identified objectives are considered to be practical/ feasible during the implementation stage, others will be subjected to a feasibility study, refer to the Strategic Plan in **Section 4.3** of this RMP.

CHAPTER 4: INTEGRATED RESOURCE MANAGEMENT PLANNING

The purpose of Integrated Resource Management Planning (IRMP) is to evaluate the information obtained from preceding phases (Process Triggers, Encumbrance Survey, Objective Identification and Research/ Information Generation) to ascertain what could be achieved based on specific constraints and parameters of the water resource and surrounding State land.

The IRMP consists of four (4) plans namely the Institutional Plan, Zoning Plan, Strategic Plan and Financial Plan. **Figure 12** shows the plans and their components.

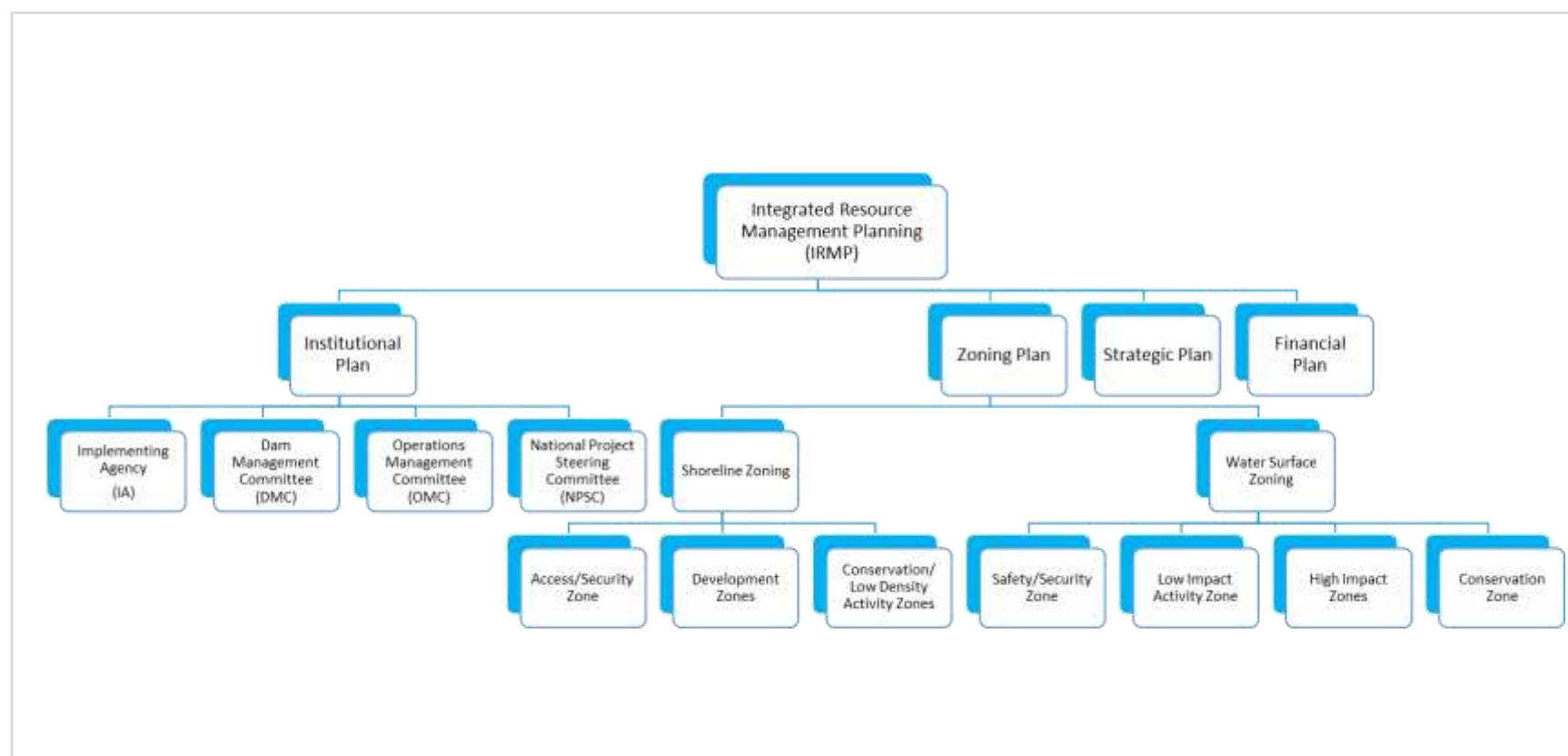


Figure 12: Integrated Resource Management Planning

4.1 INSTITUTIONAL PLAN

The Institutional Plan provides a framework for the institutional arrangements at the Dam. The proposed management systems include four (4) committees/ institutions namely; the Implementing Agency (IA), Dam Management Committee (DMC), Operations Management Committee (OMC); and National Project Steering Committee (NPSC).

The management authorities appointed by the Department at the Dam, also form part of the institutional structure.

4.1.1 Implementing Agency (IA)

The IA is an institution that would implement a programs or project on behalf of DWS.

According to DWS, the minimum requirements of an IA include the following:

- An IA must be a government entity or a public-sector body, identified by the DWS;
- IA must have the best interest of water resource and the community at large; and
- IA must be willing to work with the DWS and other users of the water resource.

The IA shall facilitate the implementation of programs or projects identified in the RMP. The IA and DWS will sign a Memorandum of Agreement (MOA), which is a legally binding document that outlines the roles and responsibilities and conditions to be followed by both parties with regards to managing the Dam for recreational use.

Some of the functions/ responsibilities of the IA include:

- Management of public access area;
- Management of recreational and tourism related activities;
- Management of agreements entered between DWS and third parties;

- Implementation of an incident management system and wash bays;
- Management of community skills and training programmes;
- Management of commercial activities (in line with Treasury Requirements); and
- Management of AtoN and demarcation markers.

4.1.2 Dam Management Committee (DMC)

The DMC comprises of user groups representatives that are interested or affected by the Dam and will assist in raising and addressing issues relating to the Dam. Any issues that the DMC is unable to resolve will be escalated to OMC (described in detailed in 4.1.4). The DMC is required to meet quarterly.

The functions of the DMC include the following (amongst others):

- To give support to Implementing Agency (IA);
- To assess commercial opportunities at the Dam;
- Seeking resolution for general management issues;
- Monitoring the practical implementation of the RMP and BP;
- Seeking and reviewing the feedback received from I&APs;
- Operational management of recreational activities, such as ensuring that the floating AtoN and demarcation markers are in place and setting times for use of the Dam;
- Assist in conveying the management objectives and decisions pertaining to the Dam to the relevant stakeholders; and
- Assist in the management of the incident management system and wash bays.

Figure 13 shows the proposed parties to form part of the DMC for Goedertrouw Dam.



Figure 13: Proposed DMC

Management Tools:

The DMC will have a number of management tools which will enable proper management of the Dam in line with legislative requirements. Some of the management tools includes the Terms of Reference.

Terms of Reference (ToR) define the purpose and structure of the DMC and its management aspect for the implementation of the RMP. The management aspects that will be guided by the ToR includes:

- Roles and responsibility of chairperson;
- Roles and responsibilities of members;
- Attendance requirements;
- Minutes and reporting requirements;
- Management of agreements;
- Management of access objectives;
- Management of development targets;
- Management of water quality monitoring;
- Management of and the control of aquatic invasive species;
- Management of development pressure;
- Management of incident management system and wash bays; and
- Management of AtoN and demarcation markers.

4.1.3 Agreements and Permits

The purpose of agreements is to ensure proper use of the Dam in line with the RMP requirements and the relevant acts and regulations.

The applicable agreements for the implementation of RMP are as follows:

Memorandum of Agreement (MOA)³:

MOA is a legally binding document that outlines the roles, responsibilities and conditions to be followed for the management of the water resource for recreational use. An MOA will be signed in an event where the DWS is tasking

another organization with its function of managing the Dam for recreational purposes.

Safety of Navigation Agreements:

The purpose of this agreement is to allow access of boating vessel to government waterworks. This agreement to be concluded between SAMSA, the DWS and other relevant parties or bodies to allow them to:

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

Access Agreements:

All access points to the Dam and surrounding State Land must be authorised. Accessing the Dam through unauthorised access points is an illegal activity. Therefore, a formal agreement with DWS will be required for all adjacent landowners and recreational clubs that have direct access to the Dam and surrounding State Land.

A formal agreement on building, management and maintenance of the wash bay is necessary between the DWS and DEA. A wash bay must be built on State Property as part of the Cooperative for Inland Watercourse Safety Programme (CIWSP).

Event Applications:

All events at the Dam and surrounding state land must be managed through an event application process. The events application will be submitted to DWS for approval through the IA. These applications must follow a specific template and will include amongst others the following:

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

³ The Department of the Water and Sanitation reserves the right to appoint an Implementing Agency at their own discretion.

All events will be expected to meet the requirements of the Safety at Sports and Recreation Act, 2010 (Act No. 2 of 2010).

4.1.4 Operations Management Committee (OMC)

There is an existing Chief Directorate: Infrastructure Operations Management Committee (CD: IO MANCO) within the DWS IBOM which comprises of directors of the IBOM's four (4) operations (Northern, Southern, Eastern and Central) and is chaired by the Chief

Director: Infrastructure Operations within the IBOM as illustrated in **Figure 14**.

The committee shall meet quarterly to discuss matters relating to operations and maintenance of all GWWs. An RMP must be a standard agenda item. Any matters relating to the RMP that are outside the scope of the DWS will be escalated to the NPSC (described in detail in 4.1.5).

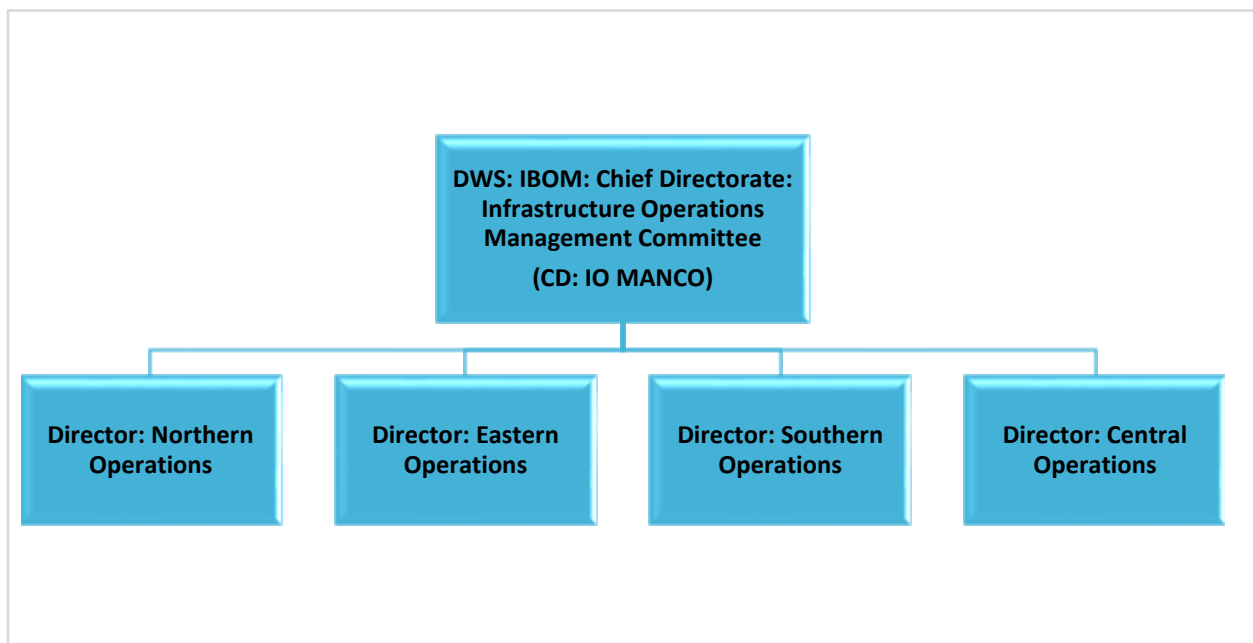


Figure 14: Existing CD: IO MANCO

4.1.5 National Project Steering Committee (NPSC)

The NPSC is formed by the DWS and is made up of representatives from national government departments and their agencies (also referred to as planning partners) that have direct and/or indirect mandate in managing the water resource. The function of the NPSC is to provide guidance and support to DWS on recreational

water use in terms of their respective mandates with the aim of achieving sustainable utilisation of the Dam. The NPSC shall meet twice a year. **Figure 15** shows government departments (also referred to as planning partners and/ or authorities) and agencies that will form part of the NPSC:



Figure 15: Proposed NPSC

4.2 ZONING PLAN

The purpose of the zoning plan is to demarcate permissible and non-permissible activities on the water surface and the shoreline to avoid conflict amongst users, uncontrolled development and to protect the water resource. In order to determine the extent of possible recreational use on the water surface, the carrying capacity of the water surface was calculated.

The proposed zoning plan integrates conservation, recreation and development ensuring not to negatively interfere with the primary functions of the Dam. This RMP and /or zonation plan does not legitimise nor does it authorise any existing built structures, infrastructure or services within the government waterworks (in both the water surface and shoreline).

4.2.1 Water Surface Zoning

The water surface zoning provides guidance on permissible and non-permissible recreational activities on the water surface taking into account the biophysical factors of the Dam. The zonation map is a desktop exercise and must not be used for navigational purposes. DWS and SAMSA will update the zonation map to be used for navigational purposes. The water surface is zoned as follows:

Safety and Security Zone:

This zone covers a minimum area of 100m from the wall and outlet works indicated by demarcation markers and AtoN. This area is reserved for the DWS management purposes.

Management of this zone is aimed at protecting the Dam wall and outlet works, as well as to ensure the safety of the public. This is a no-go zone to the public unless authorised.

Conservation Zone:

The aim of this zone is to conserve and protect sensitive aquatic habitation at the inlet of the Dam. Access to this area is generally not allowed due to the following:

- The areas intercept sediments and nutrients/pollutants which pose safety risks to the public due to muddy clay; and
- The area would be used by aquatic birds and fish species as habitat, refuge and breeding areas.

Low Impact Activity Zone

This zone acts as a buffer between high impact activity zones and conservation zones. The low impact activity zone allows for low intensity activities, i.e. activities associated with little or no wake. It includes activities such as wind surfing, kayaking, swimming, rowing, sailing, paddle boating, float tubes, canoeing, angling, yachting, and small-scale fishing.

High Impact Activity Zone:

This zone is demarcated where the Dam is at its deepest level. It caters for high impact activities associated with high speed, wake and noise activities such as motorised boat, house- boating, water-skiing, and para-sailing.

Table 10 and **Figure 16** shows the proposed water surface zoning for Goedertrouw Dam.

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

Table 10: Proposed Water Surface Zoning Description

Zone Description	Permissible Activities	Non Permissible Activities	Recommendation
<ul style="list-style-type: none"> Safety and Security Zone. 	<ul style="list-style-type: none"> Alien invasive species clearing. Management of Dam infrastructure. Management and maintenance activities by DWS and authorised personnel. 	<ul style="list-style-type: none"> Public access. 	<ul style="list-style-type: none"> Area should be demarcated by demarcation makers and AtoN.
<ul style="list-style-type: none"> Conservation Zone. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> Public activities (to prevent disturbance of aquatic habitats disturbance). 	<ul style="list-style-type: none"> Area should be demarcated by demarcation makers and AtoN. Strict management and control of these areas.
<ul style="list-style-type: none"> Low Impact Activity Zone. 	<ul style="list-style-type: none"> Activities associated with no or little water wakes such as: <ul style="list-style-type: none"> Angling from a boat Boat cruise Slipway Floating Jetty Floating chalets 	<ul style="list-style-type: none"> Motorised boating Water skiing House boats Para-sailing Kite-surfing Jet Skis Wind surfing Kite surfing Rowing Canoeing Kayaking Paddling boat Float tubes Swimming 	<ul style="list-style-type: none"> Area should be demarcated by demarcation markers and AtoN. No private slipways/ floating jetties to be built without approval from DWS. Launching and mooring of vessels should take place at this zone. Motorised boating are allowed to launch at this zone but no water wake should be formed until the designated area for motorised recreational boating is reached.
<ul style="list-style-type: none"> High Impact Activity Zone 	<ul style="list-style-type: none"> Motorised boating Aquaculture facilities 	<ul style="list-style-type: none"> Water skiing Yachting House boats Para-sailing Kite-surfing Jet Skis Wind surfing Kite surfing Rowing Canoeing 	<ul style="list-style-type: none"> Area should be demarcated by demarcation makers and AtoN. All activities within the high impact zone shall take place beyond 70m from the shoreline. Activities within this zone must be evaluated to determine their impact on the water resources and other Dam users before they are allowed into the Dam.

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

Zone Description	Permissible Activities	Non Permissible Activities	Recommendation
		<ul style="list-style-type: none">• Kayaking• Paddling boat• Float tubes• Swimming	

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

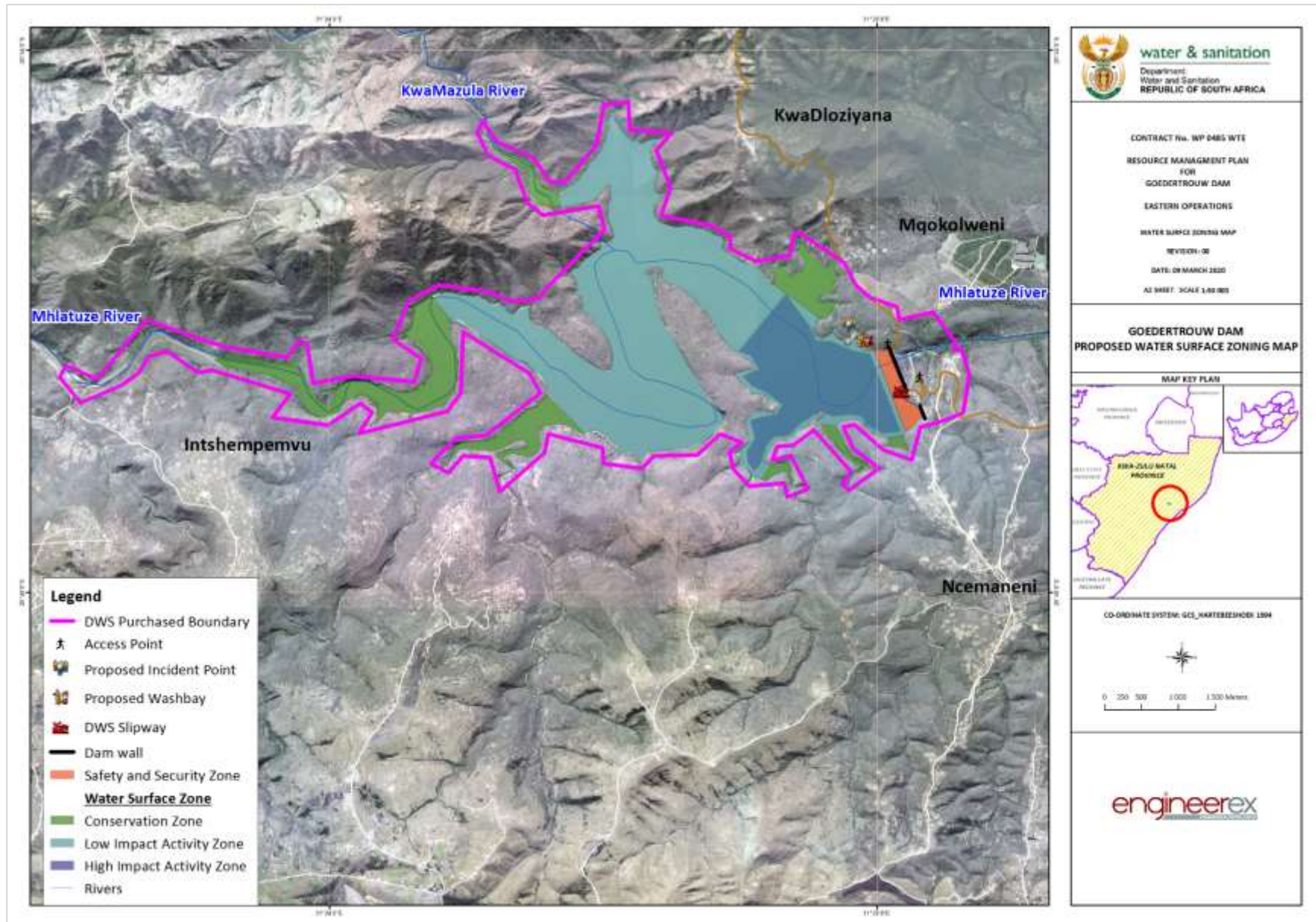


Figure 16: Proposed Water Surface Zoning

4.2.2 Shoreline Zoning⁴

In addition to the water surface zoning, an integral part of the RMP is also shoreline zoning. This zoning provides guidance on what recreational activities (if any) are permissible or not permissible on the land adjacent to the Dam (DWS purchased boundary). The shoreline zones include:

Safety and Security Zone (Dam wall and associated DWS infrastructure):

This zone is applicable to the area surrounding the Dam wall and the outlet works. The extent of this zone is determined by the DWS and shall be no less than a 100m from the Dam wall and downstream. This area is reserved for DWS management purposes.

Management of this zone is aimed at protecting the Dam wall and outlet works, as well as ensuring the safety of the public and surrounding areas. This is a no-go zone to the public unless authorised.

Conservation / Low Density Activity Zone:

This zone consists of ecologically sensitive areas and areas with high biodiversity. It also includes the area around the inlets of the Dam. Access to this area is limited to low impact activities such as hiking, and bird watching. This area is demarcated to prevent ecological Damage due to high density development activities.

Medium Density Activity Zone:

This zone is demarcated for small-scale activities such as day visiting, picnic areas, shoreline fishing, camping (tent and caravan), braai facilities, swimming pools, ablution facilities and infrastructure for services.

High Density Activity Zone:

This zone is demarcated for large-scale activities including chalets, recreational club houses,

infrastructure for services, and land based aquaculture.

Community Resource Zone:

This zone is for the sole beneficiation of the local communities in ensuring that their livelihoods are maintained and improved. Activities that may take place at this zone include subsistence fishing, Aquaculture, livestock watering points, and small-scale community gardens.

Table 11 and **Figure 17** and **18** shows the proposed shoreline and overall zoning for Goedertrouw Dam.

⁴ Permanent structures within the purchase line are not allowed. All developments should be outside 1:100 year floodline.

Table 11: Proposed Shoreline Zoning Description

Zone Description	Permissible Activities	Non-permissible Activities	Recommendation
<ul style="list-style-type: none"> Safety and Security Zone. 	<ul style="list-style-type: none"> Fire management; Alien invasive species clearing Management of Dam infrastructure Management and maintenance activities by DWS and authorised personnel 	<ul style="list-style-type: none"> Public access 	<ul style="list-style-type: none"> A minimum area of 100m wide downstream the Dam wall should be demarcated preventing public access and use.
<ul style="list-style-type: none"> Conservation/ Low Density Activity Zone 	<ul style="list-style-type: none"> Conservation Management Activities 	<ul style="list-style-type: none"> Development 	<ul style="list-style-type: none"> Permissible activities may only be permitted provided that they are approved by the relevant Authorities and they are conduct as per the relevant legislations. These zones should control access to ecological sensitive areas.
<ul style="list-style-type: none"> Medium Density Activity Zone. 	<ul style="list-style-type: none"> Camping (tent and/or caravan) Day visitors Picnic Braai facilities Swimming pools Ablution facilities Aquaculture facilities 	<ul style="list-style-type: none"> Accommodation facilities such as: <ul style="list-style-type: none"> Chalets Recreational club houses Permanent Structures Shoreline fishing 	<ul style="list-style-type: none"> The management of this area should follow the PPP process in terms of National Treasury. All developments must be approved by DWS. Requirements of NWA and NEMA must be taken into account in all developments. Noise levels to be kept at a minimum. Camping, picnicking, bank angling and access to the water must be done in accordance to access agreements. Camping and picnicking is allowed only in designated areas. Noise levels to be kept at a minimum. No littering at Camping and Picnic spots.
<ul style="list-style-type: none"> High Density Activity Zone 	<ul style="list-style-type: none"> Accommodation facilities: <ul style="list-style-type: none"> Chalets Guesthouse Recreational Boat House Infrastructure for services 	<ul style="list-style-type: none"> Hiking Camping Picnicking Caravan park Permanent structures 	<ul style="list-style-type: none"> The management of this area should follow PPP process in terms of the National Treasury. All developments must be approved by DWS. Requirements of NWA and NEMA must be considered in all developments.

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

Zone Description	Permissible Activities	Non-permissible Activities	Recommendation
<ul style="list-style-type: none"> Community Resource Zone 	<ul style="list-style-type: none"> Subsistence fishing Livestock watering points Small-scale Community gardens Aquaculture 	<ul style="list-style-type: none"> Chalets Recreational club houses Braai facilities Camping and picnicking Permanent Structures 	<ul style="list-style-type: none"> No private slipways to be built without approval from the DWS. Requirements of the NWA must be taken into account in all recreational activities.

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

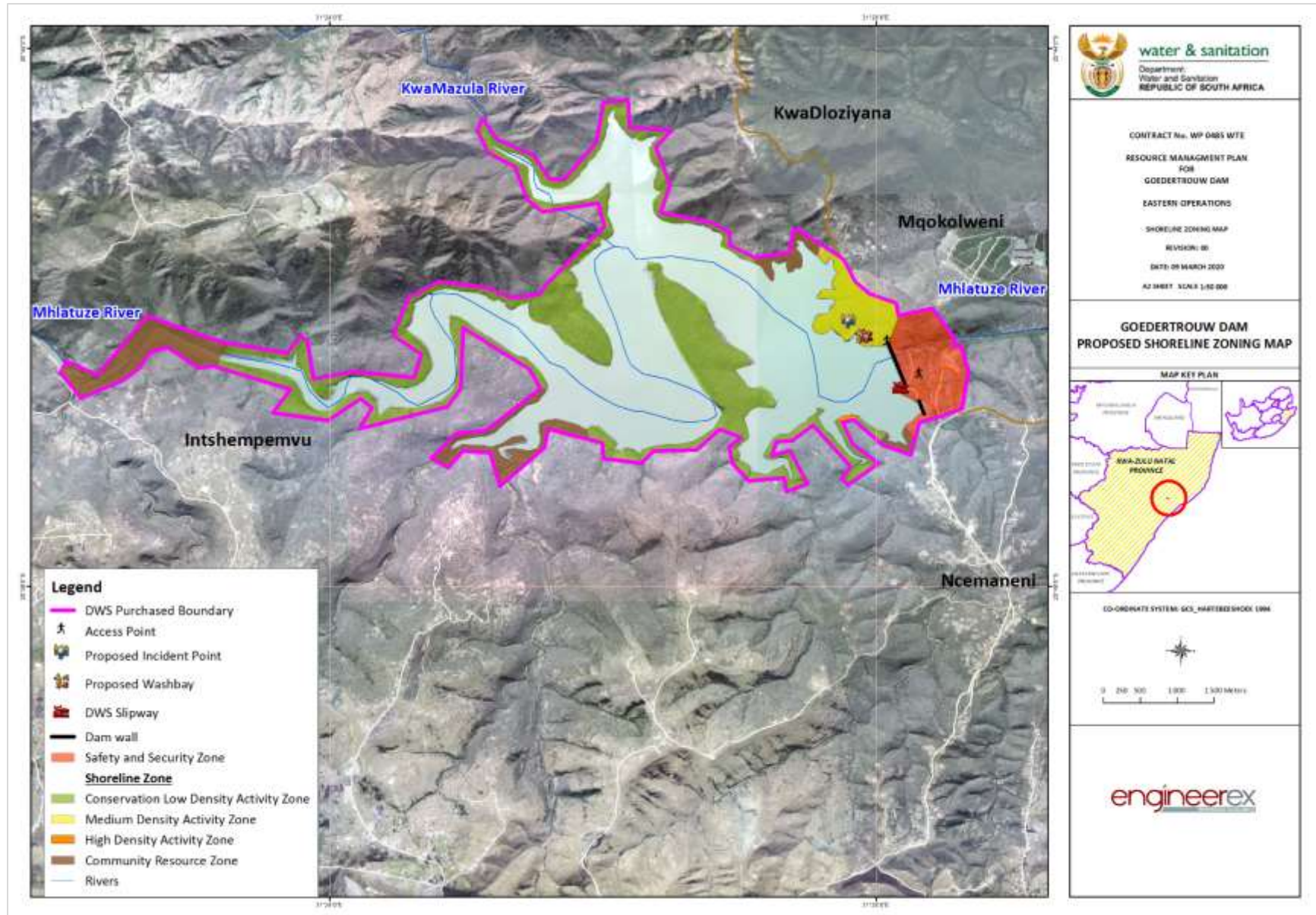


Figure 17: Proposed Shoreline Zoning Map

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

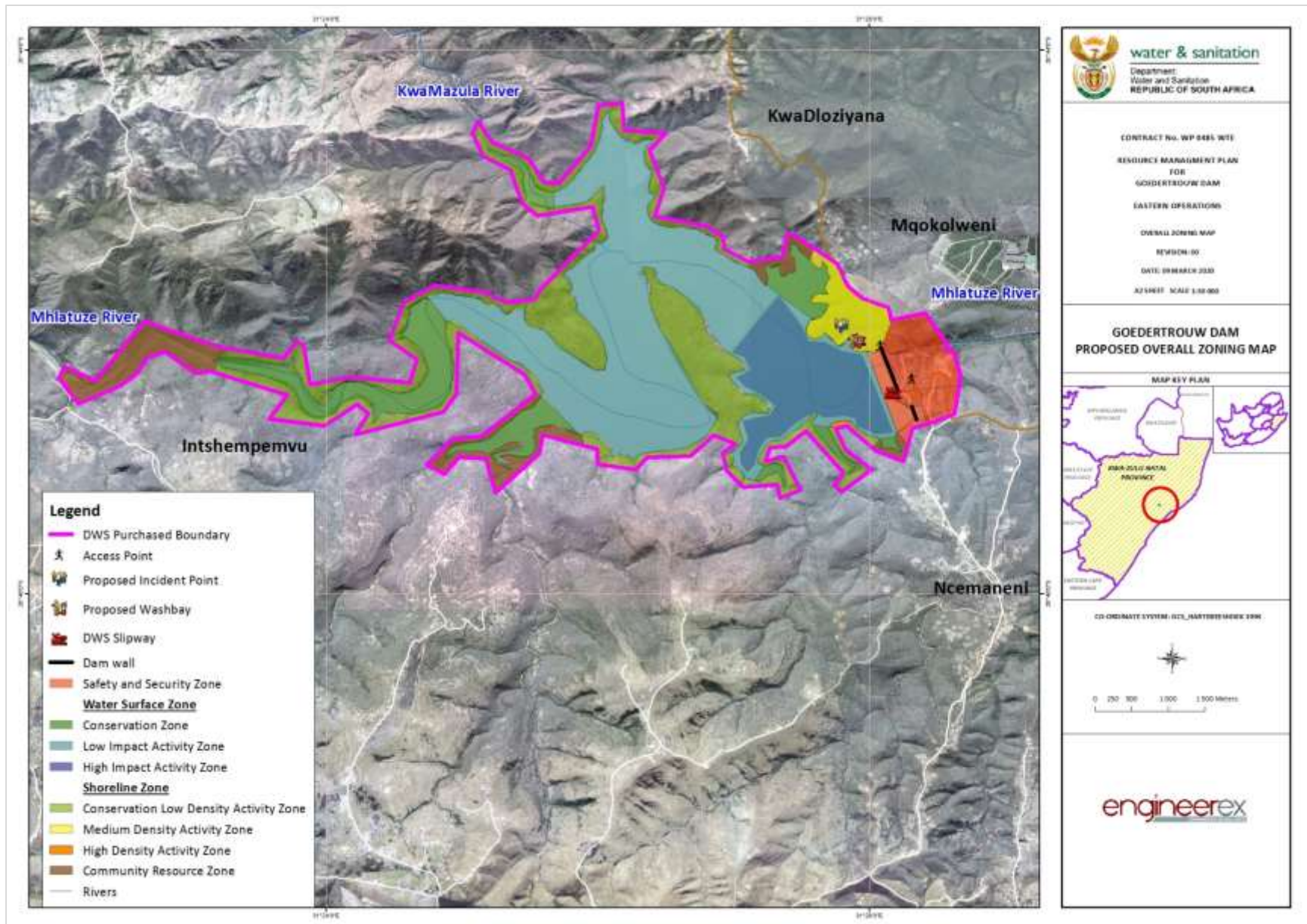


Figure 18: Proposed Overall Zoning Map

4.2.3 Carrying Capacity

The carrying capacity provides a guideline for recreation to ensure that the Dam is safe, that users do not feel crowded and that they enjoy the use of the Dam.

The Methodology for Carrying Capacity Assessment for the use of water for Recreational purposes was used as a guideline to determine the maximum level of visitor/recreational use and related infrastructure that the water resource and surrounding area can accommodate (DWAF, 2003).

There are three levels of carrying capacity:

- **Physical Carrying Capacity (PCC)** – this is the maximum number of users that can physically fit onto the water resource over a particular time;
- **Real Carrying Capacity (RCC)** – this is the maximum permissible number of users that can use the resource once corrective factors that are unique to the Dam are taken into account on the PCC; and
- **Effective (or permissible) Carrying Capacity (ECC)** – this is the number of visitors that can use the resource, given the management capacity available.

Each level constitutes a corrected capacity level of the preceding level. The PCC is always greater than the RCC, and the RCC is greater than the ECC, i.e.: **PCC > RCC and RCC ≥ ECC**.

The process of establishing the carrying capacity is normally determined through the following tasks:

- Analysis of recreation and water resource management policies;
- Analysis of objectives of the water resource;
- Analysis of current recreational water use;
- Definition, strengthening or modification of policies regarding recreational water use management;
- Identification of factors influencing recreational water use; and

- Determination of the recreational water use carrying capacity.

Physical Carrying Capacity (PCC)

Formula: $PCC = A \times U/a \times Rf$

Where:

A = available Surface area for public use

U/a = area required per user

Rf = rotation factor (number of visits/day)

Table 12 shows the type of craft and the required area for use.

Table 12: Area required per user

Craft	U/A (ha/craft)
Yachts	2.0
Average	2.0

Based on the table above the average hectare per user is 2.0 ha (20 000 m²), the value of 5.0 ha (50 000 m²) can be acceptable area per user. This has been chosen in order to ensure that the Dam is not overcrowded, as such impacting on the sense of the area.

The available surface area for Goedertrouw Dam is **1 200 ha** whereas **U/a** is assumed to be the average which was calculated as 1 craft/5 ha. And again the rotation factor (**Rf**) is assumed as 1 visit per day.

Therefore: $PCC = A \div U/a \times Rf$
 $= 1\,200 \times 1/5 \times 1$
 $= 240$ crafts on the Dam

Real Carrying Capacity (RCC)

RCC = $PCC \times (100 - Cf1) \% \times (100 - Cf2) \% \times \dots (100 - Cfn) \%$

Where:

Cf = a corrective factor expressed as a percentage.

The RCC takes into account factors that limit recreation use (craft based) of the Dam. For Goedertrouw Dam, these factors includes sensitive areas, such as conservation areas

(193 ha) as well as aspects regarding the safe operation and management of the Dam (18 ha).

These factors accounts for 211 ha, that is 18% of the area that is not available for recreational use.

Therefore: $RCC = PCC \times (100 - cf1) \% \times (100 - cf1) \% \times (100 - cf1) \%$

$$= 240 \times (100 - 18) \%$$

$$= 196 \text{ crafts}$$

Effective Carrying Capacity (ECC)

ECC = [Infrastructure Capacity x Management Capacity] x 100/ RCC

Given that the Dam currently offers no recreational activities and the recreational facilities are in a bad condition. There is also no management structure in place. Hence the ECC is currently 0. Once there is an Institutional structure for the management of infrastructure capacity, then the ECC can be calculated to verify if the RCC can be possible.

4.3 STRATEGIC PLAN

The strategic plan is informed by the objectives identified by stakeholders and through research on potential opportunities at the Dam. The objectives are broken down into management fields which are listed below in a format offering ease of reference:

- Objective (What is envisaged for the Dam?);
- Motivation (Why is it important to achieve this?);
- Action Projects (How to achieve this?); and
- Management support (Who will be involved?).

In **Tables 13 to 15**, the strategic plan on how to achieve the objectives identified for the Dam is outlined.

4.3.1 KPA 1: Resource Management

Table 13: Strategic Plan for KPA 1: Resource Management

Objective (What do we want)	Motivation (Why do we want to achieve this)	Action Projects (How do we achieve this)	Management Support (Who will be involved)
Cultural Aspects and Heritage: <ul style="list-style-type: none"> To find an acceptable solution in dealing with the graves under water. 	<ul style="list-style-type: none"> There are submerged graves within the DWS purchased boundary. 	<ul style="list-style-type: none"> DWS to engage with the affected families to determine a way forward in dealing with graves underwater 	<ul style="list-style-type: none"> DWS DMC
Access Control: <ul style="list-style-type: none"> To investigate fencing the entire dam in order to control access to the dam and ensure safety of the people and livestock. 	<ul style="list-style-type: none"> The Dam is fenced around the Dam wall only, as a result access control remains a challenge. Neighbouring community members have direct access to the water surface. The access road to the Dam from the R66 crosses over the Dam wall, and the communities use the same road to get to their homesteads. The Dam is a habitat to crocodiles. Lack of access control leads to vandalism on the existing recreational facilities as well as the infrastructure of the dam. There are also reports of recurring drowning incidents of livestock and children who swim at the Dam whilst herding cattle. 	<ul style="list-style-type: none"> To investigate (through a feasibility study) erecting a fence at safety hotspots where the community deems dangerous for the children as well as livestock. To implement an institutional management structure to oversee access and recreational use of the Dam. Educate the local communities about the importance of protecting and conserving the water resource so as to prevent issues of theft and vandalism at the Dam. To put notice boards notifying and warning people about the presence of crocodiles in the Dam. The objective will be incorporated in a Business Plan to determine projected costs for the implementation of the action projects. 	<ul style="list-style-type: none"> DWS DMC
Storage capacity: <ul style="list-style-type: none"> To investigate desilting the Dam. 	<ul style="list-style-type: none"> Silt reduces the capacity of the Dam and South Africa is experiencing drought and the country needs more water than ever before. 	<ul style="list-style-type: none"> DWS to include Goedertrouw Dam in the list of prioritised dams for desiltation. Donate the removed silt to the communities to manufacture bricks and other uses. 	<ul style="list-style-type: none"> DWS DMC

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

		<ul style="list-style-type: none"> If the sand is of bad quality it should be disposed appropriately. 	
<p>Recreational Institutional Structure:</p> <ul style="list-style-type: none"> To establish an effective and functional institutional structure inclusive of community representative to manage access and recreational use of the Dam. 	<ul style="list-style-type: none"> Currently, there is no organisation or appointed institutional structure that is managing the Dam for access and potential recreational use. According to the RMP guidelines, an effective institutional structure must be established in terms of DWAF's considerations on the Institutional Arrangements for Managing Use of Water for Recreational Purposes guideline (2003). 	<ul style="list-style-type: none"> DWS to appoint a DMC to oversee the implementation of the Goedertrouw Dam RMP. 	<ul style="list-style-type: none"> DWS

4.3.2 KPA 2: Resource Utilisation

Table 14: Strategic Plan for KPA 2: Resource Utilisation

Objective (What do we want)	Motivation (Why do we want to achieve this)	Action Projects (How do we achieve this)	Management Support (Who will be involved)
<u>Public Safety:</u> <ul style="list-style-type: none"> To ensure public safety by improving security around the Dam. 	<ul style="list-style-type: none"> There have been two fatal incidences reported to have occurred in the past at the Dam. One involving a rescue boat that capsized and a child who drowned whilst swimming. There are no notice boards at the dam warning the visitors about the presence of crocodiles. There is not suitable, standardized and harmonized fixed and floating aids to Navigation (Aton) and Demarcation Markers in Place. There is no incident management system in place to ensure that incidents are responded to in a coordinated manner. 	<ul style="list-style-type: none"> Implement adequate, standardised, harmonised fixed and floating AtoN and demarcation markers. Implement and manage DWS incident management system. Implement an institutional management structure to oversee access and recreational use of the Dam. Develop information material (i.e. signage and pamphlets, etc.) to convey safety rules at the Dam. 	<ul style="list-style-type: none"> SAMSA DMC DWS DoT Other relevant stakeholders
<u>Swimming Pool:</u> <ul style="list-style-type: none"> To investigate the construction of a swimming pool since swimming in the Dam is prohibited due to the presence of crocodiles. 	<ul style="list-style-type: none"> Swimming in the Dam is prohibited due to the presence of crocodiles. 	<ul style="list-style-type: none"> To conduct a feasibility study to investigate the possibilities of constructing a swimming pool in the picnic area. 	<ul style="list-style-type: none"> DMC KCDM ULM MLM
<u>Subsistence Fishing:</u> <ul style="list-style-type: none"> To promote subsistence fishing at the Dam. 	<ul style="list-style-type: none"> There is an interest for fishing at the Dam to sustain livelihoods. However, fishing from the dam is dangerous due to the presence of crocodiles. 	<ul style="list-style-type: none"> Permits (fishing licence) must be acquired and the use of gill nets must be prevented, as it has significant negative impact on fish population within the dam. Educate community members on fishing methods that are safe and sustainable. Preserve the core habitats for nesting, resting, feeding and breeding of fish 	<ul style="list-style-type: none"> KwaZulu-Natal Department of Agriculture and Rural Development (KZN DARD) DEFF DMC DWS

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

Objective (What do we want)	Motivation (Why do we want to achieve this)	Action Projects (How do we achieve this)	Management Support (Who will be involved)
		<p>within the inlets, by demarcating areas for subsistence fishing.</p> <ul style="list-style-type: none"> • Develop a communication signage in order to effectively inform different angling groups about the dam fishing rules. • Appoint and train safety officers from within the communities to monitor compliance of the dam fishing rules. 	
<p><u>Refurbishment:</u></p> <ul style="list-style-type: none"> • To revive the picnic area and tourism in general at the Dam. 	<ul style="list-style-type: none"> • The visitor's area and the existing facilities are vandalised and need to be refurbished. 	<ul style="list-style-type: none"> • Construction of recreational facilities: <ul style="list-style-type: none"> ○ Outdoor and covered Braai Stands; ○ Construction of Lapas; ○ Angling banks; and ○ Ablution Facilities. • Should the design, development and operation of the public facility be outsourced, then local contractors should be given first priority. • Implement a signage system that communicates relevant information, especially where this pertains to zoning restrictions and other rules and regulations. 	<ul style="list-style-type: none"> • DMC
<p><u>Public Awareness:</u></p> <ul style="list-style-type: none"> • To conduct awareness programmes to educate local communities about the importance of protecting and conserving water resources 	<ul style="list-style-type: none"> • There are issues of theft and vandalism of the infrastructure at the Dam. • When DWS erects a fence around the Dam it gets stolen. The fence gets compromised. • The dangers of crossing the Dam wall, poses safety risks such as drownings and potential uses of the Dam. 	<ul style="list-style-type: none"> • Identify specific communities of interest for the public awareness programmes. • Identify and develop information material to be used for community out reach. • Conduct the public participation on awareness. 	<ul style="list-style-type: none"> • DMC • ULM • MLM

GOEDERTROUW DAM RESOURCE MANAGEMENT PLAN

Objective (What do we want)	Motivation (Why do we want to achieve this)	Action Projects (How do we achieve this)	Management Support (Who will be involved)
Recreational Facilities: <ul style="list-style-type: none"> To establish more tourism facilities (B&Bs, resource centres, etc) and recreational activities such as cruise boating. 	<ul style="list-style-type: none"> There is a cultural village which is an attraction in Eshowe on the southern side of the Dam that can accommodate overflow at the Dam as it is in the proximity of the Dam. In the past the cultural village offered a boat cruise on the Dam, however that activity has since been discontinued. There used to be a private lodge operating on the southern shore of the Dam. The lodge was renowned for the floating and on land chalets. However, the lodge is no longer in operation. If more compatible tourism facilities are put in place, they will open economic opportunities to the area within which the Dam is located. To encourage people with art and craft talent to display and market their work at the Dam. 	<ul style="list-style-type: none"> Implement the RMP to regulate developments within DWS purchased boundary. Restrict permanent structures within the DWS purchased boundary. Explore Public Private Partnerships (PPPs). Establish conference centres at the Dam. Market the Dam for recreational use and tourism. 	<ul style="list-style-type: none"> DMC KCDM ULM MLM

4.3.3 KPA 3: Benefit Flow Management

Table 15: Strategic Plan for KPA 3: Benefit Flow Management

Objective (What do we want)	Motivation (Why do we want to achieve this)	Action Projects (How do we achieve this)	Management Support (Who will be involved)
<u>Agricultural Use:</u> <ul style="list-style-type: none"> To investigate constructing water ponds near the Dam to supply water for irrigation and to promote farming and livestock watering. 	<ul style="list-style-type: none"> Livestock drink water from the Dam and risk drowning in deeper areas. The dam is a habitat to crocodiles. As such, livestock get attacked by crocodiles when drinking water from the dam. 	<ul style="list-style-type: none"> DWS to engage KZN DARD on the way forward regarding this matter. As Schedule 1: Permissible Water Use states that a person may use water in or from a water resource for purposes such as reasonable domestic use, domestic gardening, animal watering, fire fighting and recreational use. 	<ul style="list-style-type: none"> KZN DARD DMC DWS
<u>Skills Development Programmes:</u> <ul style="list-style-type: none"> Uplift the local economy and increase benefit flows to the surrounding communities through community empowerment. 	<ul style="list-style-type: none"> Tourism sector has been identified as a vehicle for skills development, job creation, Broad-based Black Economic Empowerment (BBBEE), etc. it is imperative that the local communities derive benefits from recreational activities conducted at the Dam. The level of unemployment in the area is high. 	<ul style="list-style-type: none"> Implement skills development programmes where opportunities exist. Implementation of environmental awareness programs to the local communities in order to ensure that they are always updated with environmental information. Educate and train the community on how to utilise the Dam for other recreational activities besides fishing. This will assist in terms of uplifting the surrounding local community. Extend awareness to the communities on project management skills. Prioritise the local community if any job and business opportunities arises. 	<ul style="list-style-type: none"> DMC KCDM ULM MLM

4.4 FINANCIAL PLAN

A Financial Plan provides guidance on how revenue can be generated through recreational use of the Dam and how it should be used to ensure community participation and beneficiation. The plan also aims to ensure sustained and improved management of the Dam.

The proposed DMC for this Dam can explore the various streams of generating revenue as presented below:

4.4.1 Potential Sources of Revenue

Access Fees Potential revenue can be generated from access fees paid by visitors. A standard access fee can be charged per person based on their age group. The determination of access fees should take cognisance of the socio-economic profile of the area so as to cater for the local communities. The access fees cannot be used for rent or to make profit. Over and above access fees, additional fees can also be charged which includes:

- **Parking Fees:** Motorists can be charged extra fees for parking.
- **Event and Service Based Fees:** These are extra fees that can be charged for the following:
 - Fishing (sports);
 - Private boating;
 - Functions (festivals, weddings, conferences and cultural activities); and
 - Caravan/ outdoor camping.

It is important that the identified events above be established at the Dam for the realisation of the identified fees.

Rental Charges: Potential source of revenue can also be explored on rental fees, *inter alia*, boat clubs operating from the Dam should pay the leasing fees. The terms of payment will be stipulated in the lease agreement between DWS through the DMC (leaser) and the lessee.

4.4.2 Target Market

To realise the above-mentioned revenue the following will be the target:

- Eshowe Town;
- Melmoth Town;
- Empangeni Town;
- Farmers;
- Cultural villages;
- Churches;
- Schools;
- Institutions;
- Group tourists; and
- Government Departments.

In light of the above mentioned, there should be sources of capital for initial investment for the upgrading of existing infrastructure as well as setting up of new facilities. The proposed DMC can consider the following sub-sections as a source of capital.

4.4.3 Co-Funding

The project can leverage its existence in the local Integrated Development Plan (IDP) to harness funding. Co-funding is also viable where DMC is appointed to manage recreational use of the Dam. Examples of projects of similar nature which were successfully co-funded are Roodeplaat Dam Nature Reserve and Nonoti Beach Resort Development (Coastal Marine Tourism Project). Details in this regard are attached as **Appendix G**.

Government Departments can fund the DMC to supplement operational costs and other scenarios by co-funding identified objectives that are related to their mandate. It is recommended that an appropriate DMC be appointed to manage recreational use of the Dam on behalf of DWS. Examples of potential co-funders are:

- The Department of Tourism;
- Industrial Development Corporation (IDC); and
- InvestSA (One Stop Shop).

More information on the co-funders is attached in **Appendix H**.

A more detailed Financial Plan (FP) is contained in the Business Plan (refer to **Appendix I**), which will facilitate the implementation of the RMP by

providing an implementation program and cost estimates for all possible economic recreational activities.

The information acquired from the RMP will be used to produce the Business Plan (BP) based on the action projects for each objective as stipulated under the Strategic Plan. However, many of the identified objectives are not of commercial nature and as such these non-economic objectives will not feature in the BP.

The BP provides a good description of possible economic recreational activities and the methods that can be used or enhanced to achieve the ultimate vision and the key objectives of the Goedertrouw Dam RMP. It also describes the financial management and operational requirements to implement the objectives of the RMP.

CONCLUSION AND WAY FORWARD

This RMP comprehensively covered inter alia the environmental analysis (biophysical, built and socio-economic environment) of the Dam, RMP data analysis (encumbrance survey, objective identification and research/ information generation) as well as the integrated resource management planning which consists of the institutional plan, zoning plan, strategic plan and the financial plan.

The key challenges identified include:

- The Dam is fenced only around the Dam wall and associated infrastructure hence access control remains a challenge. The local communities use the access road from R66 that crosses over the Dam wall to get to their homesteads. This activity may lead to major injuries and drownings as the wall is not built to serve as a crossing bridge;
- The picnic area, ablution facility, guard house and the fence have all been vandalised;
- Lack of control of local community livestock that is grazing and drinking at the Dam;
- There is no management structure to oversee access and the potential recreational use of the Dam;
- The Dam is silted and the storage capacity is reduced due to silt deposits from upstream;
- There are agricultural fields and graves submerged under water within the DWS purchased boundary;
- There are no security guards at the Dam to monitor safety for potential recreational use;
- The poles to support the fence around the picnic area have been stolen and the fence is compromised;
- The Dam is a habitat to crocodiles;
- There have been two fatal incidences that occurred in the past at the Dam (boat incident and drowning incident) that were reported;
- Game animals that were abandoned at the animal park (area previously managed as

Community Conservation Area) were hunted and killed by community members to sustain their livelihood;

- Children continue to swim at the Dam when herding livestock and this is very risky due to the presence of crocodiles and this could potentially lead to crocodile attacks and drowning;
- Community members practice subsistence fishing regardless of the presence of crocodiles, this too is a safety risk but over and above that the fishing is not controlled;
- Effects of climate change specifically reduced rainfall negatively impacting on the availability of water in the Dam;
- Drought conditions in the past have led to the discontinuation of the bass fishing club from operating at the Dam; and
- Human–wildlife conflict: Livestock drink water from the Dam and graze on the banks of the Dam. There is a risk that they may drown as they try to reach for water in deeper areas. Also the risk of being attacked by the crocodiles exists.

Recommendations:

This RMP recommends the immediate establishment of the DMC with the mandate to:

- Oversee access and potential recreational use of the Dam;
- Avoid conflict amongst users, uncontrolled development and to protect the water resource, the permissible and non-permissible activities on the water- and shoreline surface are delineated in the Zoning Plan and covered under Section 4.2; and
- Ensure public safety with regards to the use of inland vessels, the maximum level of recreational use the water resource can accommodate is covered under Carrying Capacity in section 4.2.3.

Way Forward:

According to DWAF (2006), the RMP may be reviewed and updated every five (5) years to ensure that the management objectives remains relevant and management actions are continually improved. The BP is updated

annually. **Figure 19** illustrates the RMP & BP review framework.

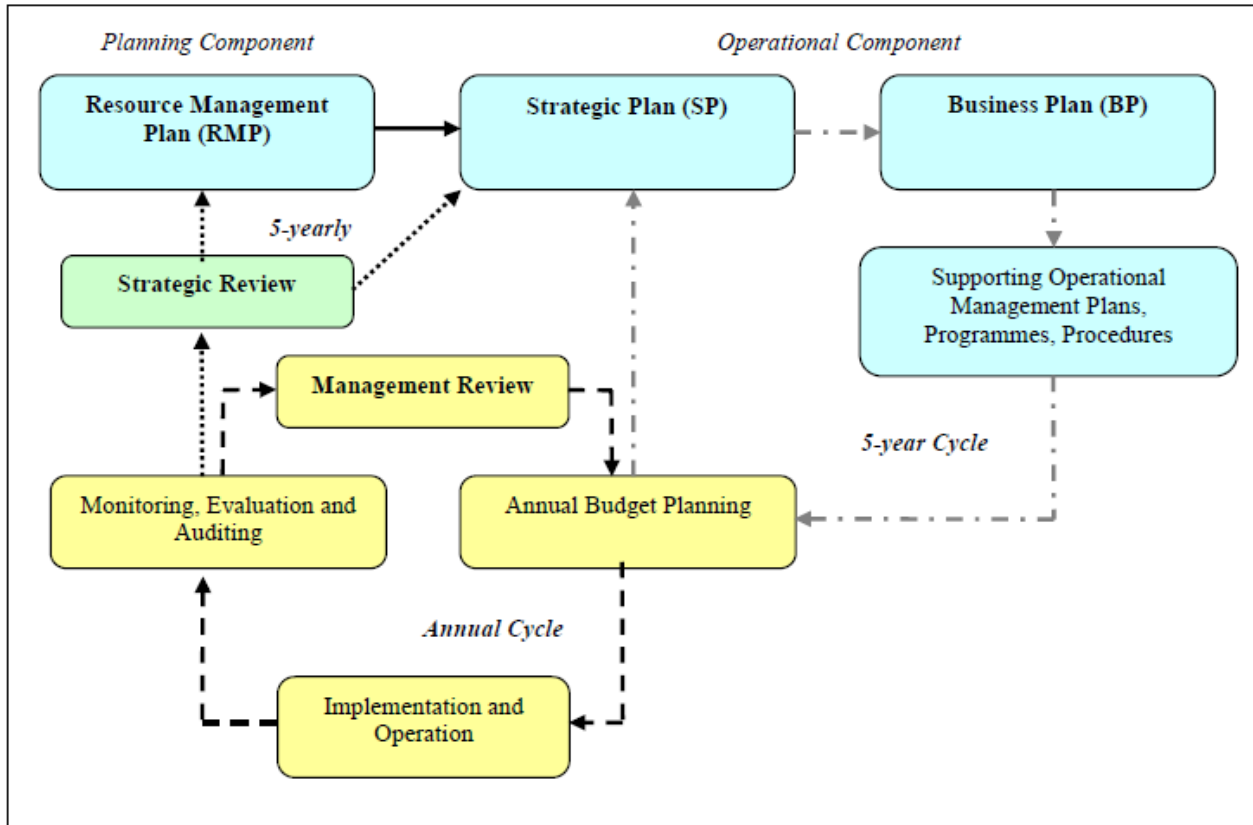


Figure 19: RMP and BP Review Framework

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APPENDICES

APPENDIX A : STAKEHOLDER DATABASE REGISTER

APPENDIX B : BACKGROUND INFORMATION DOCUMENT (BID)

APPENDIX C : NEWSPAPER ADVERT

APPENDIX D : FLYERS

APPENDIX E : EMAILS

APPENDIX F : COMMENT AND RESPONSES REGISTER

APPENDIX G : EXAMPLES OF SUCCESSFULLY CO-FUNDED PROJECTS

APPENDIX H : POTENTIAL CO-FUNDERS

APPENDIX I : BUSINESS PLAN