

Resource Management Plan LOERIE DAM

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Department:
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- Department of Water and Sanitation;
- Department of Environmental, Forestry and Fisheries;
- Nelson Mandela Bay Municipality;
- Kouga Local Municipality;
- Sarah Baartman District Municipality;
- Eastern Cape Department of Economic Development, Environmental Affairs and Tourism;
- Ward Councillors of Ward 7 of Kouga Local Municipality; and
- Community members of Loerieheuvel.

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

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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	04/02/2020
1	Draft RMP for public Review	10/02/2020
2	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 guidelines 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 Loerie Dam, herein after referred to as the Dam, which is part of the Infrastructure Build, Operate and Maintenance (IBOM) Southern Operations.

This RMP was developed in accordance with the Guidelines 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, 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 Loerie 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;

- 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 use of inland vessels; and
- Uncontrolled development within the Dam basin.

Community Participation and Beneficiation:

- Challenges faced by 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 earthfill type of dam which was built as part of the Kouga Dam scheme with the purpose of supplying Port Elizabeth with water. The construction of the Dam was completed in 1971 and the dam wall was raised in 1983. At full capacity the Dam has a water surface area of

approximately 52 hectares with a capacity of 3.3 million cubic meters.

The Dam is situated on the municipal boundary of Kouga Local Municipality (Kouga LM) and within the jurisdiction of the Sarah Baartman District Municipality (SBDM) in the Eastern Cape Province of South Africa. The centre point co-ordinates of the Dam are 33°51'54"S and 25°02'20"E.

Purpose of the Dam: The primary purpose of the Dam is to provide water to Nelson Mandela Bay Municipality (NMBM) for domestic and industrial use which is augmented and supplied from the Kouga Dam via the Gamtoos River canal system. Therefore the level of Loerie Dam mainly fluctuates as a result of the operations on water supply from Kouga Dam. The dam currently offers no recreational activities, however subsistence fishing has been reported.

Dam Ownership and Management: The Dam is owned by DWS and is managed and operated by the NMBM for primary use. Furthermore, the Dam is situated within the Loerie Dam Nature Reserve (LDNR), which is managed by Kouga LM for recreational purposes (currently not in use).

Currently there is no proper recreational institutional structure to manage the dam for secondary (recreational) use. Through the process of developing the RMP, a proposed Implementing Agency (IA), such as NMBM shall be appointed by DWS to facilitate the implementation of the objectives and identified action projects in line with the requirements of the Loerie Dam RMP on behalf of DWS. The IA will sign a Memorandum of Agreement (MOA) with DWS which shall be a legally binding document outlining the roles, responsibilities and conditions that must be followed by both parties for the management of the water resource for recreational use.

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 use and management 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 improve the water quality at the Dam as well as the river;
- To raise the Dam wall in order to increase the storage capacity of the Dam;
- To prevent the regeneration of alien plants species within the dam's surrounds;
- To establish an effective and functional institutional structure inclusive of community representation to manage recreational activities and access;
- To ensure that there is adequate and equitable public access for angling and boat launching;
- To promote subsistence fishing at the Dam;
- To investigate the feasibility of introducing aquaculture project at the Dam;
- Refurbishment of the picnic site at the Dam;
- To construct swimming pools at the Dam;
- To revive and improve the Loerie Dam Nature Reserve;
- To establish tourism facilities such as B&Bs, conference centres and recreational activities including hiking, bird watching, and other water sports at the dam; 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 ensure sustainable development and prosperity at the dam which will empower the local community members, conserve the environment and uplift the socio-economic potential of the area”.

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

- Refurbishment of the picnic site at the Dam;
- To revive and improve the Loerie Dam Nature Reserve; and
- To cater and make provision for public access for angling at the Dam.

The key challenges identified include:

- There are water quality issues at the Dam as well as the river;
- The existing development upstream of the Dam is believed to negatively impact the dam’s water quality especially during rainy season;
- Inadequate fencing;
- To regulate the livestock of the local farmer that is grazing and drinking at the Dam;
- There is no security personnel to oversee the recreational use or subsistence fishing at the Dam;
- There have been three (3) drowning incidences reported at the Dam;
- Vandalism of infrastructure such as fence and ablution facilities;
- Unauthorized access to the Dam;
- Drought may have a negative impact on the implementation of the RMP and may also hinder community participation;
- The possible regrowth of the AIPs in the area will threaten the indigenous plants species;
- Shoreline vegetation around the Dam is threatened by overgrazing from livestock which may also cause soil erosion issues;
- Uneven surface and lack of access to the water surface at the picnic site has resulted in people not using the area for recreational purposes;

- Communities have high expectations so their expectations have to be met otherwise they can be very negative and hostile;
- Lack of skills as the majority of the residents have not furthered their education up to higher level;
- Majority of residence do not have any source of income and are living below the poverty datum line, representing a standard of living attained by a person to be deemed poor; and
- There is no management structure to oversee access and the potential recreational use of the Dam.

Recommendations:

This RMP recommends the following immediate actions:

- Appoint NMBM as a proposed IA to manage recreational use of the Dam on behalf of DWS;
- Establishment Dam Management Committees (DMC) to serve as an advisory committee to the proposed IA;
- 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.

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LIST OF ACRONYMS

AIPs	Alien Invasive Plants
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
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
DEDEAT	Eastern Cape Department of Economic Development, Environmental Affairs and Tourism
DEFF	Department of Environment, Forestry and Fisheries
DMC	Dam Management Committee
DoT	Department of Transport
DPW	Department of Public Works
DRDAR	Eastern Cape Department of Rural Development and Agrarian Reform
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
IBOM	Infrastructure Build, Operate and Maintenance
IDP	Integrated Development Plan
IEE	Integrated Environmental Engineering
IRMP	Integrated Resource Management Planning
Kouga LM	Kouga Local Municipality
KPAs	Key Performance Areas
LAAP	Local Accountable Aton Parties
LDNR	Loerie Dam Nature Reserve
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)
NMBM	Nelson Mandela Bay Municipality
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
SBDM	Sarah Baartman District Municipality
SDF	Spatial Development Framework
SWOT	Strengths, Weaknesses, Opportunities and Threats
ToR	Terms of Reference
WMA	Water Management Area

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

The Department of Water and Sanitation (DWS), through the National Water Act (NWA), 1998 (Act No. 36 of 1998), mandates the Minister as the custodian of the nation's water resources. Part of the duties of the minister are to ensure that the government waterworks (GWWs), including the Loerie 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 DWS initiated and commissioned the development of the RMP and Business Plan (BP) for Loerie 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 Loerie Dam, herein after referred to as the Dam, which is part of the Infrastructure Build, Operate and Maintenance (IBOM) Southern 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 Loerie Dam. This is done in order to attain the objectives underlying sustainability in Section 2 of the NWA, with particular relevance to Section 26 and 113 relating to the use of water and access and use of government waterworks for recreational purposes.

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

1.3 DESCRIPTION AND LOCATION OF THE DAM

The Dam is an earthfill type of dam which was built as part of the Kouga Dam scheme with the purpose of supplying Port Elizabeth with water. The water surface area is approximately 52 hectares with a full capacity of approximately 3.3 million cubic meters. **Table 1** shows the dam profile.

The Dam is located on the demarcation boundary of Ward 7 of Kouga Local Municipality (Kouga LM) which falls under the jurisdiction of Sarah Baartman District Municipality (SBDM) in the Eastern Cape Province of South Africa as shown in **Figure 1**. The GPS coordinates are 33°51'54"S 25°02'20"E.

1.4 PURPOSE OF THE DAM

The primary purpose of the Dam is to provide water to Nelson Mandela Bay Municipality (NMBM) for domestic and industrial use which is augmented and supplied from the Kouga Dam via the Gamtoos River canal system. Therefore the level of Loerie Dam mainly fluctuates as a result of the operations on water supply from

Kouga Dam. The Dam currently offers no recreational activities, however subsistence fishing has been reported.

1.5 DAM OWNERSHIP AND MANAGEMENT

Loerie Dam is owned by DWS and is managed and operated by the NMBM for bulk water provision. The dam is situated within the Loerie Dam Nature Reserve (LDNR), which is managed by Kouga LM for recreational purposes (currently not in use). Currently there is no institutional structure managing the Dam for recreational purposes. Through the RMP development process, a proposed Implementing Agency (IA) such as NMBM, shall be appointed by DWS to facilitate the implementation of the objectives and identified projects in line with the requirements of the Loerie Dam RMP on behalf of DWS.

Table 1: Loerie Dam Profile

Loerie Dam Profile	
Location	South Africa
Province	Eastern Cape
District Municipality	Sarah Baartman
Local Municipality	Kouga
Completion Year	1971
Completion date for raised dam wall	1983
Coordinates	33°51'54"S 25°02'20"E.
Purpose	Domestic and industrial use
Owner	DWS
Quaternary Catchment	L90C
Water Management Area	Mzimvubu-Tsitsikamma
River	Loerie
Capacity (Mm ³)	3.3
Surface area (ha)	52
Wall type	Earthfill
Wall Height (m)	26.5
Crest Length (m)	245

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

LOERIE DAM RESOURCE MANAGEMENT PLAN

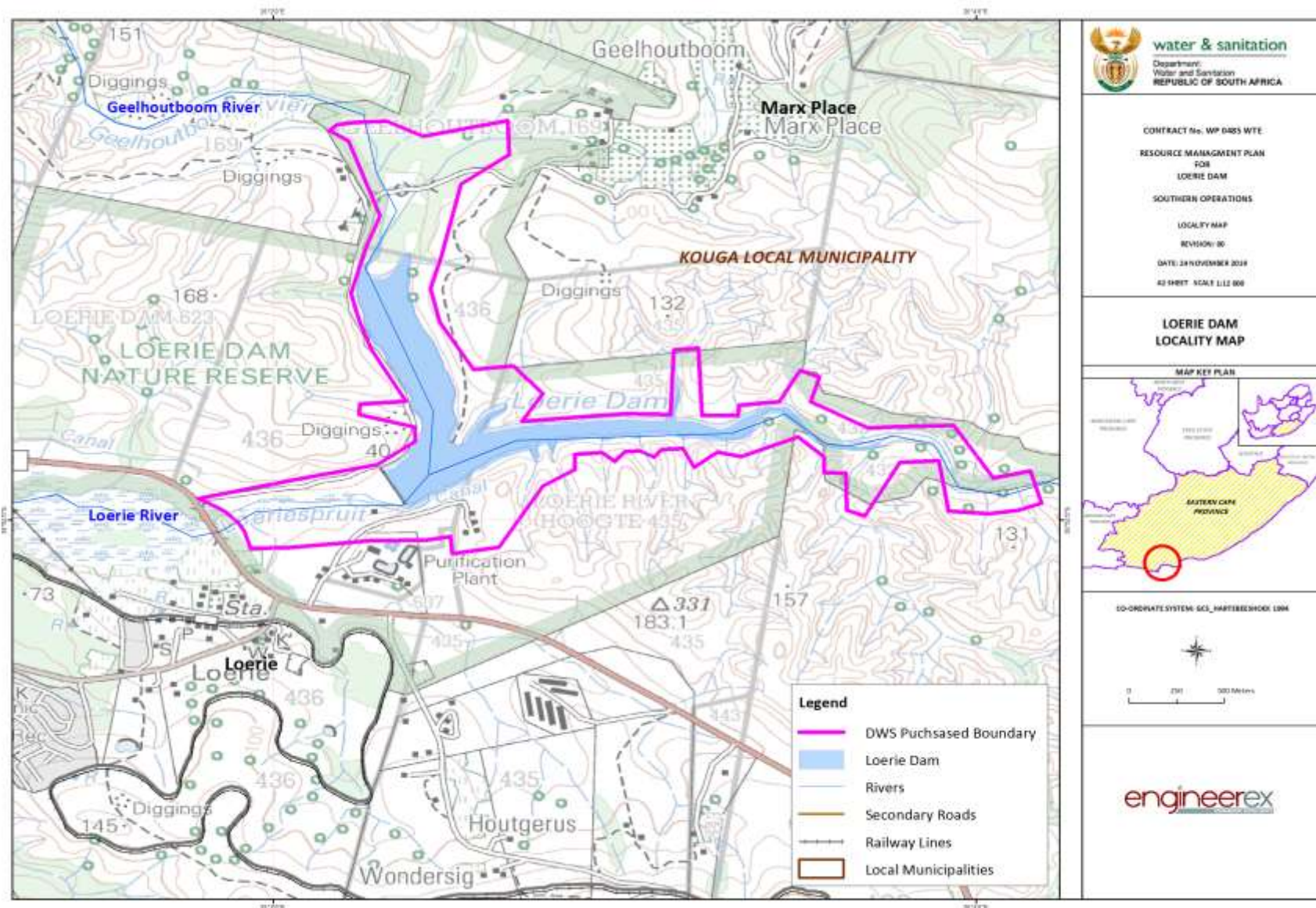


Figure 1: Locality Map for Loerie Dam

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 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

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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]	"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. 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".
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

LOERIE 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 "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:
Kouga Local Municipality Final IDP (2017 - 2022)	"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."
Sarah Baartman District Municipality IDP (2017 - 2022) (2019/2020 Review)	

CHAPTER 2: ENVIRONMENTAL ANALYSIS

2.1 BIOPHYSICAL ENVIRONMENT

2.1.1 Climate

According to (Climate-data.org, 2020), the Hankey lies on 51m above sea level, the climate is mild, and generally warm and temperate. There is significant rainfall throughout the year in Hankey. Even the driest month still has a lot of rainfall. The Köppen-Geiger climate classification is Cfb. The average annual temperature in Hankey is 17.6 °C. The average annual precipitation is 510 mm, whilst South Africa is a relatively dry country and is well known for its sunshine. With an average annual rainfall of only 464mm (compared to a global average of 860 mm), making it a popular spot for foreign visitors, (Climate and Weather, 2020).

At an average temperature of 21.5 °C, February is the hottest month of the year. In July, the average temperature is 13.6 °C, it is the lowest average temperature of the whole year, (Climate-data.org, 2020).

According to Herald live (30.10.2019), *“the Eastern Cape Province has been declared a drought disaster area. The long-awaited declaration was gazetted. The premier acting in terms of the Disaster Management Act and after consultation with other members of the executive council, hereby declares a provincial state of disaster in the province of the Eastern Cape due to the drought”*.

2.1.2 Topography

During the site inspection held on 16 September 2019 at Loerie Dam, it was observed that the Loerie area where the dam is located is steep and rocky, furthermore the area where the picnic site is located is steep and does not have access to the water surface.

2.1.3 Geology and Soil

The geology of the Dam is underlain by Jurassic-Cretaceous sediments of the Uitenhage Group. The alluvial zones (recent alluvial deposits of various textures, but usually with high clay

content) can become flooded following the west-east passage of frontal systems in autumn and winter or during intensive local storms in summer (Mucina, L. & Rutherford, M.C. (eds) 2006).

2.1.4 Hydrology

Water Surface

The Dam lies within the L90C quaternary drainage which forms part of the Mzimvubu-Tsitsikamma Water Management Area (WMA). **Figure 2** shows the water level fluctuations over a year period.

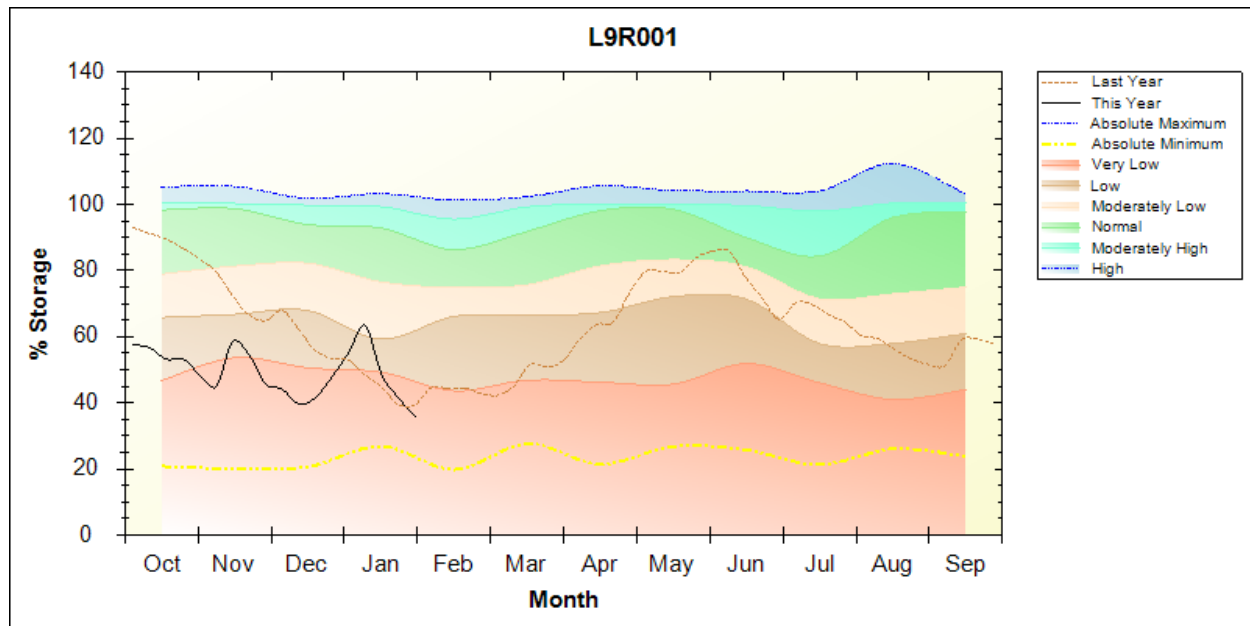


Figure 2: Fluctuations of Loerie Dam water level over a year.
Source: DWS, (2020)

As per **Figure 2**, the average storage level recorded for the year 2019 was approximately 51% full which is considered low. However for the year 2020 at the time of this RMP compilation the storage level was recorded as 35% full which is considered very low (DWS, 2020).

The current recorded storage level, might prevent the implementation of potential recreational activities on the water surface. However, the demand to use water for recreational activities will depend on the Dam being on its 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).

During a site inspection conducted on 16 September 2019, it was indicated that water samples from the Dam show high level of microbiological contamination which might be attributed to untreated effluent from the local sewage treatment works. The water in the dam

may potentially be polluted by the Thornhill wastewater treatment works of Kouga Local Municipality, located upstream adjacent to a tributary of the Berg River and disposing untreated sewage effluent.

It is also alleged that the existing development upstream of the dam is believed to negatively impact the dam's water quality especially during rainy season.

2.1.5 Flora

The Dam falls within the Albany Alluvial Vegetation where two major types of vegetation pattern are observed in these zones, namely riverine thicket and thorn veld (*Acacia natalitia*). The riverine thicket tends to occur in the narrow floodplain zones in regions close to the coast or further inland, whereas the thorn veld occurs on the wide floodplains further inland. (Mucina, L. & Rutherford, M.C. (Eds) 2006). Shoreline vegetation around the dam is threatened by overgrazing from the livestock which may cause soil erosion issues.

2.1.6 Fauna

During site inspection livestock were spotted drinking water and grazing at the Dam banks.

2.2 BUILT ENVIRONMENT

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

- Roads and land-based transportation;
- On-site facilities;
- Fencing;
- Management and operation; and
- Safety.

2.2.1 Roads and Land-Based Transportation

Internal Road and Circulation: There are several internal gravel roads that leads to the Dam wall, NMBM offices, picnic site, and LDNR.

Parking: There is sufficient open ground area that can be developed into a parking area.

2.2.2 On-site Facilities

The existing facilities at the Dam includes:

- NMBM offices; and
- Dilapidated ablution facilities within the picnic site.

The existing facilities at the LDNR includes:

- Overnight accommodation;
- Braai facilities,
- A hall,
- Kitchen; and ablution facilities.

2.2.3 Fencing

There is inadequate fencing at the Dam which leads to local community member's vandalizing the fence and Dam infrastructure to forcefully gain access to the Dam for fishing.

2.2.4 Management and Operation

The Dam is owned by DWS and is managed and operated by the NMBM for primary use. Furthermore, the Dam is situated within the Loerie Dam Nature Reserve (LDNR), which is managed by Kouga LM for recreational purposes (currently not in use).Through the process of

developing the RMP, an appropriate IA such as NMBM is proposed for the management of the potential recreational use for this Dam.

There are no suitable 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).

2.2.5 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. However, as part of the RMP process, the Incident Management Plan will be implemented to ensure that incidents are recorded and responded to. There have been three (3) drowning accidents reported at the Dam in the past.

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 7 of Kouga LM, refer to **Figure 3** 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; and
- Community beneficiation.

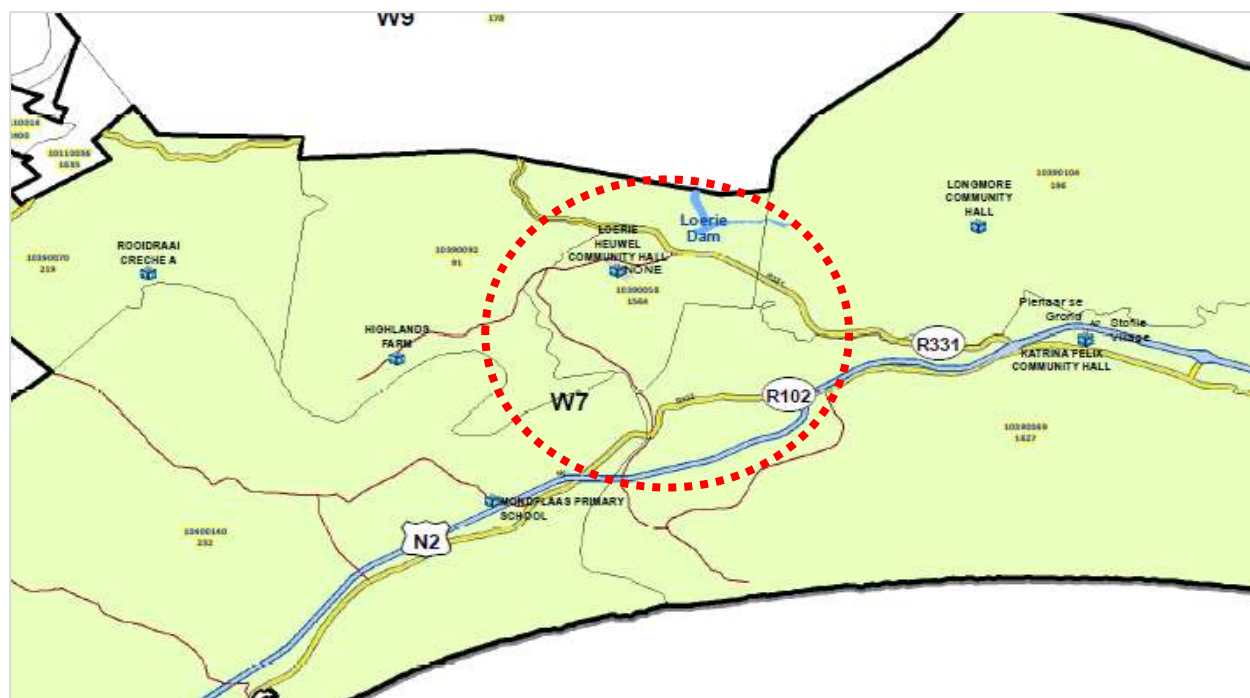


Figure 3: Kouga Local Municipality Ward 7 Boundary

Source: Municipal Demarcation Board (2016)

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, secondary, higher educational and no schooling categories. Ward 7 has people representing 48% of residents in Kouga LM who have secondary level education. Furthermore only 4% of people in ward 7 have furthered their studies up to higher education level as illustrated in **Table 4** and **Figure 4**.

Table 4: Educational Level for Ward 7 versus Kouga LM

Description	Ward 7 (2016)	KougaLM (2016)
Primary Level	42%	35%
Secondary Level	48%	53%
Higher Educational Level	4%	7%
No Schooling	6%	5%

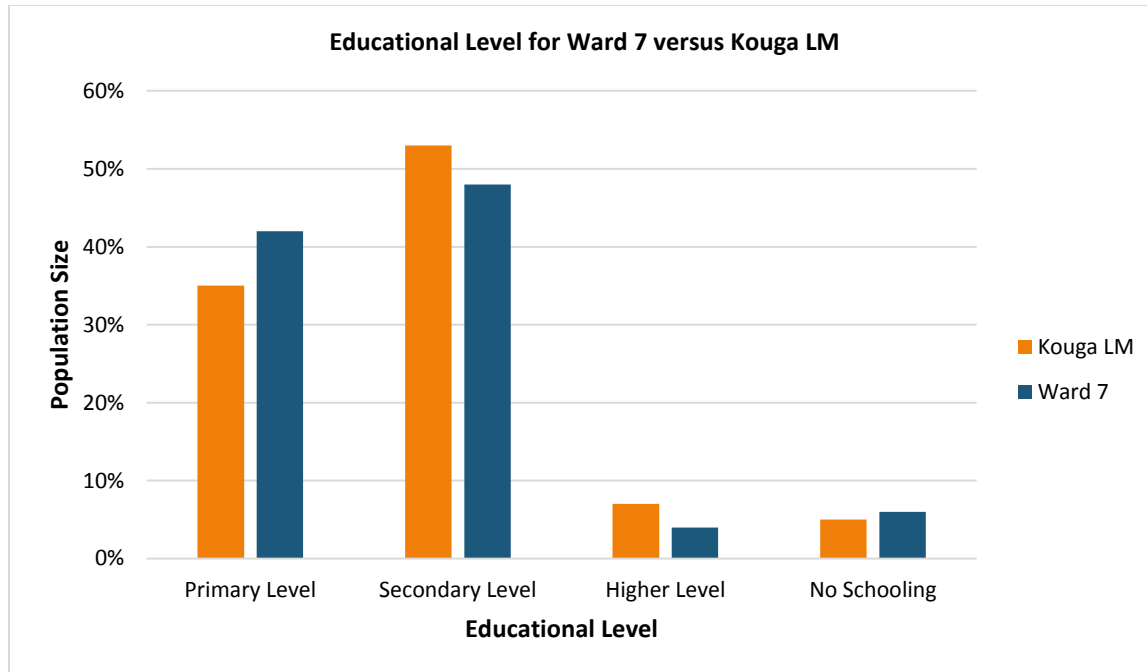


Figure 4: Educational Level for Ward 7 versus Kouga LM
Source: Stats SA Community Survey (2016)

Monthly Income

According to The Stats SA Community Survey (2016), ward 7 has 4 339 individuals representing 45% of the Kouga LM population without sources of income (refer to **Figure 5**).

The situation then requires concerted and integrated efforts by the municipalities to create decent work and sustainable livelihoods for the people.

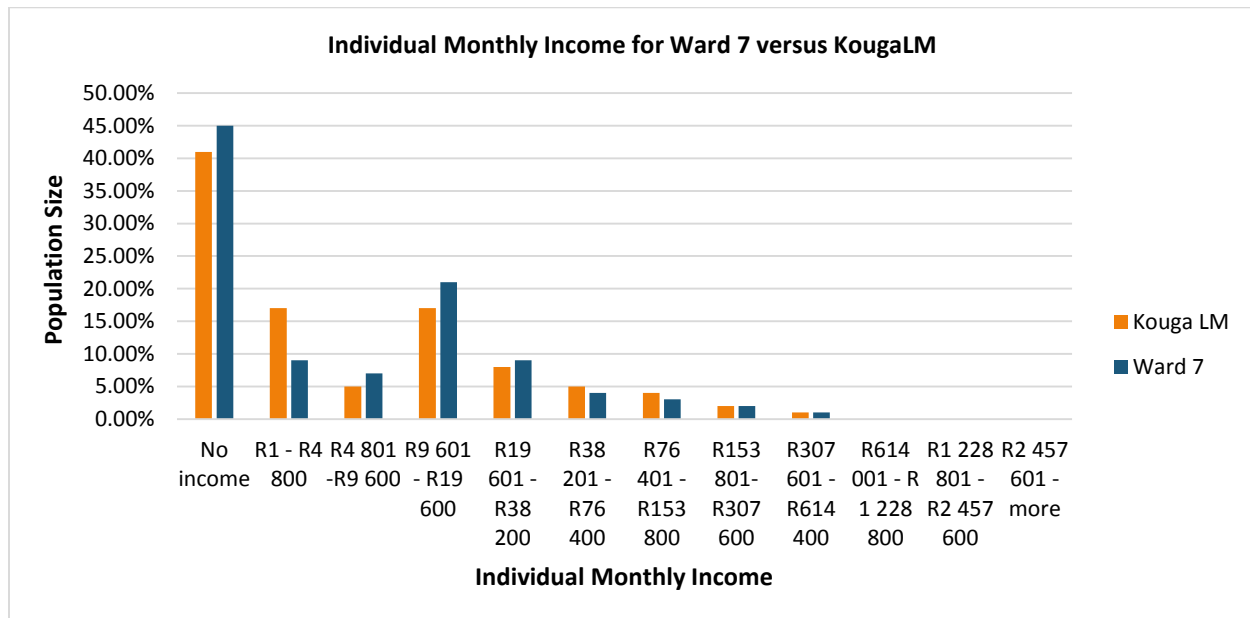


Figure 5: Individual Monthly Income for Ward 7 versus KougaLM
Source: Stats SA Community Survey (2016)

2.3.1 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 use.

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 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 5**.

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 5: Summary of triggers and potential challenges for Loerie Dam

Trigger Factors	Description
Resource Management	<p><u>Protected area:</u></p> <ul style="list-style-type: none"> The dam is located within the Loerie Dam Nature Reserve, which is owned by the Sarah Baartman District municipality and managed by Kouga Local Municipality. . <p><u>Water quality issues:</u></p> <ul style="list-style-type: none"> There are water quality issues at the dam and/ river feeding into the dam. The existing development upstream of the dam is believed to negatively impact the dam's water quality especially during rainy season. <p><u>Access control:</u></p> <ul style="list-style-type: none"> It is alleged that local community members / fishermen vandalize the fence to forcefully gain access to the dam for fishing. It is alleged that local community members are denied access to the dam for recreational use. The access point where the picnic site is located is steep and has no access to the water surface. The ablution facilities have been vandalised. To regulate the livestock of the local farmer that is grazing and drinking at the dam. <p><u>Management Structure:</u></p> <ul style="list-style-type: none"> There is no proper management structure to oversee the recreational use of the dam and the nature reserve.

Trigger Factors	Description
Resource Utilisation	<p><u>Public Safety:</u></p> <ul style="list-style-type: none"> • There is no security personnel to ensure safety when accessing the Dam for recreational use or subsistence fishing. • There have been three (3) drowning incidences reported at the dam.
Community participation and beneficiation	<p><u>Community Participation and Beneficiation:</u></p> <ul style="list-style-type: none"> • Local communities should be involved in managing and utilizing 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.
Public Policy	<p><u>Local Planning Initiative:</u></p> <ul style="list-style-type: none"> • To integrate Loerie Dam in the Municipal Development Plans and Policies such as Integrated Development Plan (IDP), Environmental Management Framework (EMF), Strategic Development Framework (SDF).

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 6**.

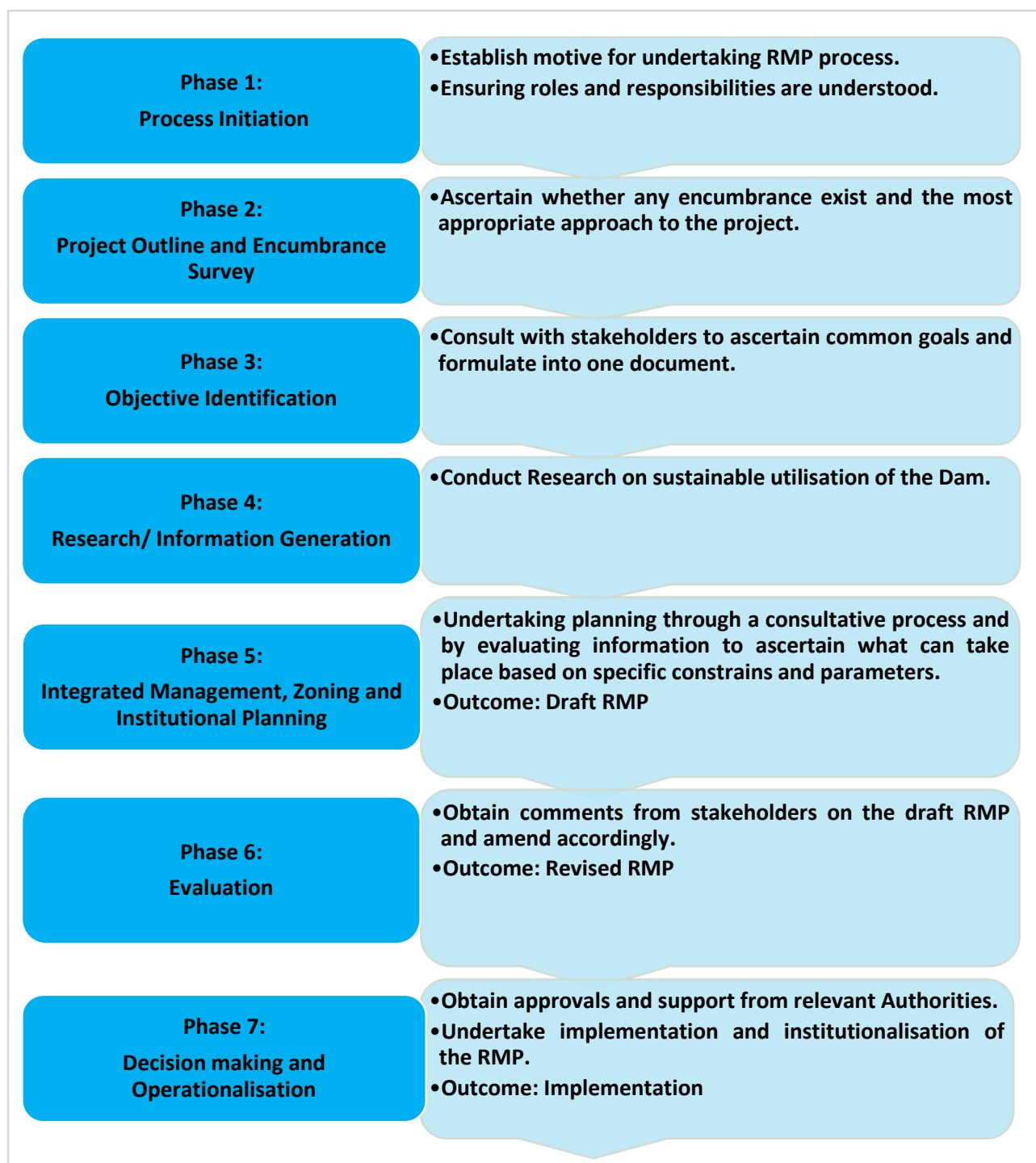


Figure 6: RMP Procedure

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, Dam Control Officer and the Southern Operations Champion) on **16 September 2019**.

During the site inspection the following were observed: dilapidated picnic area that is no longer in use; livestock grazing and drinking water from the dam; vandalised fence due to lack of access to the water surface at the dam and unused recreational facilities within the Loerie Dam Nature Reserve due to lack of maintenance and management structure.

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 **Kouga Express**. The advert invited the public to attend the Public Participation Meetings. The advert was published in English on **17 October 2019**. The draft RMP presentation advert was published on **Kouga Express** on **20 February 2020** (see attached **Appendix C**).
- **Flyers and Onsite Notices:** Flyers were compiled in English and were distributed on **16 October 2019** for the initial public meeting furthermore, for the follow up public meeting the flyers were distributed on **08 November 2019**. For the draft RMP presentation, the flyers and the draft RMPs were distributed on **13 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 **17 October 2019**, notifying them about the scheduled consultative meetings, furthermore, for the follow up meeting the email

notifications were sent out on **05 November 2019**. The meeting invites for the draft RMP presentation were sent on **17 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 planned for **24 October 2019** at **Loerieheuwel Community Hall** and the meeting was then rescheduled and held on **18 November 2019** at **Loerieheuwel Community Hall**. The draft RMP meeting was cancelled due to lack of interest from the authorities. 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 meeting was scheduled for **24 October 2019** at **Loerieheuwel Community Hall**, due to poor attendance which was caused by political issues in the area the meeting was rescheduled and held on **18 November 2019** at **Loerieheuwel Community Hall**. The draft RMP was presented on **27 February 2020** at **Loerieheuwel Community Hall**.
- **Comment and Responses Register:** Copies of the draft RMP were circulated on **13 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**).

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 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 6**. 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.

Table 6: Planning Partners and their Respective Mandates

Department	Functions / objectives
Kouga Local Municipality	<p>The Dam is within the jurisdiction of the KougaLM.</p> <p>Tourism is not classified as an economic sector on its own, but it is an industry which forms part of various economic sectors such as retail, finance, business, transport, communication, etc. Kouga is traditionally seen as a “tourist town” because of its world class surfing beaches, lush agricultural landscape, which led to Kouga known as the “fruit and vegetable basket of the Eastern Cape”, and its rich cultural heritage where the Khoi icon, Sarah Baartman is commemorated as the Sarah Baartman Centre of Remembrance in Hankey. Tourism is a large economic contributor in the Kouga area.</p>
Department of Environment, Forestry and Fisheries (DEFF)	<p>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.</p> <p>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.</p>
Department of Environmental Affairs (DEA)	<p>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.</p> <p>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.</p>
Department of Public Works (DPW)	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.

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Department	Functions / objectives
Cooperative Inland Watercourse Safety Programme (CIWSP)	<p>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, 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 and Socio-cultural. **Table 7** summarises the identified biophysical, legal and socio-cultural encumbrances/ limitations that might affect the development or implementation of the RMP for the Dam.

Table 7: Summary of Biophysical and social Encumbrances

Item	Description
Climate	<ul style="list-style-type: none"> The effect of drought might limit recreational activities especially water sports and might discourage local communities to engage in recreational activities due to lack of potable water in their homes. If the drought persist in the area it will be impossible to implement the RMP for the Dam.
Flora	<ul style="list-style-type: none"> The possible regrowth of the AIPs in the area will threaten the indigenous plants species. As AIPs cause loss of native biodiversity resulting in the degradation of local ecosystem and also consume more water which will cause the water resource to be stressed. Shoreline vegetation around the dam is threatened by overgrazing from the livestock which may cause soil erosion issues.
Topography	<ul style="list-style-type: none"> Lack of access to the water surface have resulted in the picnic area not being used by the public and local community members end up vandalizing the fence to access the dam for fishing purposes. This poses a safety risk to the local community as they might get injured when accessing the dam.
Hydrology	<ul style="list-style-type: none"> According to (DWS, 2020), the Dam level is 55% which is low. The demand to use water for recreational activities will depend on the dam being on its full supply level.
Expectations	<ul style="list-style-type: none"> If the community expectations are not met the community may lose trust in the department.
Education Level	<ul style="list-style-type: none"> Majority of the local community members in Ward 7 do not have higher education and they will need training in order to be involved or engage in tourism related opportunities at the dam.
Monthly Income	<ul style="list-style-type: none"> Ward 7 of KougaLM has 45% of people with no source of income. This will result to a lack of community participation in the tourism developments at the dam. The majority of residents in Ward 7 have no sources of income and are living below the poverty datum line, representing a standard of living attained by a person to be deemed poor.

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 in order to determine the **Strengths** and **Opportunities** that define the potential of

the Dam and the challenges regarding the Dam were identified through **Weaknesses** and **Threats**. Refer to **Table 8** for the SWOT analysis.

Table 8: SWOT Analysis for Loerie Dam

Strengths	Weaknesses
<ul style="list-style-type: none"> • The Dam is within Loerie Dam Nature Reserve. • There are walking trails for recreational use. 	<ul style="list-style-type: none"> • Lack of maintenance on the infrastructure. • Local community members do not have access to the Dam and the river. • Local farmers are fencing off the river for their own personal gain. • No recreational facilities in the area. • Lack of maintenance (primary and secondary use). • Unauthorized / uncontrolled access to the Dam. • The Dam is not fenced. • The Dam is underutilized.
Opportunities	Threats
<ul style="list-style-type: none"> • Picnic site or play area for kids. • Ablution facilities. • Access to the Dam for fishing. • Slipways / jetties to launch boats. • Swimming pools. • Employment opportunities e.g life guards, security personnel. • Braai facilities. • Lights at the Dam (No person allowed after sunset at the dam). • Overnight facilities similar to Gariep Dam. • Kiosk or shop to accommodate recreational use. • Sports retreats at the Dam. • Conference centre. • To integrate Loerie Dam with the Loerie Dam Nature Reserve. • Reviving / refurbishment of the Loerie Dam Nature Reserve. • Tourism opportunities. • Aquaculture at the Dam. 	<ul style="list-style-type: none"> • E.coli is a threat to the Dam's water quality. • Illegal hunting of game animals at the Dam e.g ducks. • Drought is threatening the recreational use of the Dam. • Irrigation board. • Presence of alien invasive plants. • Grazing of livestock at the Dam. • Pollution is a threat to the water quality of the Dam. • Farmers prohibit local community members to fish at the dam and also at the river. • Development upstream of the Dam is threatening the water quality of the Dam. • Sewage spills from development upstream.

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 improve the water quality at the dam as well as the river;
- To raise the dam wall in order to increase the storage capacity of the Dam;

- To prevent the regeneration of alien plants species within the dam's surrounds; and
- To establish an effective and functional institutional structure inclusive of community representation to manage recreational activities and access.

KPA 2: Resource Utilisation

- To ensure that there is adequate and equitable public access for angling and boat launching;
- To promote subsistence fishing at the Dam;

- To investigate the feasibility of introducing aquaculture project at the Dam;
- Refurbishment of the picnic site at the Dam;
- To construct swimming pools at the Dam;
- To revive and improve the Loerie Dam Nature Reserve; and
- To establish tourism facilities such as B&Bs, conference centres and recreational activities including hiking, bird watching, and other water sports at the dam.

KPA 3: Benefit Flow Management

- To uplift the local economy and increase benefit flow to the surrounding communities through meaningful community empowerment.

Action projects required to achieve these objectives are provided in detail 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 ensure sustainable development and prosperity at the dam which will empower the local community members, conserve the environment and uplift the socio-economic potential of the area”.

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

There is a potential to refurbishment the picnic site, open a new access point with access to the water surface, swimming activities for kids and adults, fishing (subsistence, sports and also fish farming), boating, canoeing, and water sports. There is also potential for educational tours such

as operational side of the dam, environmental awareness.

The LDNR should also be revived to attract tourists in the area.

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 7** shows the plans and their components.

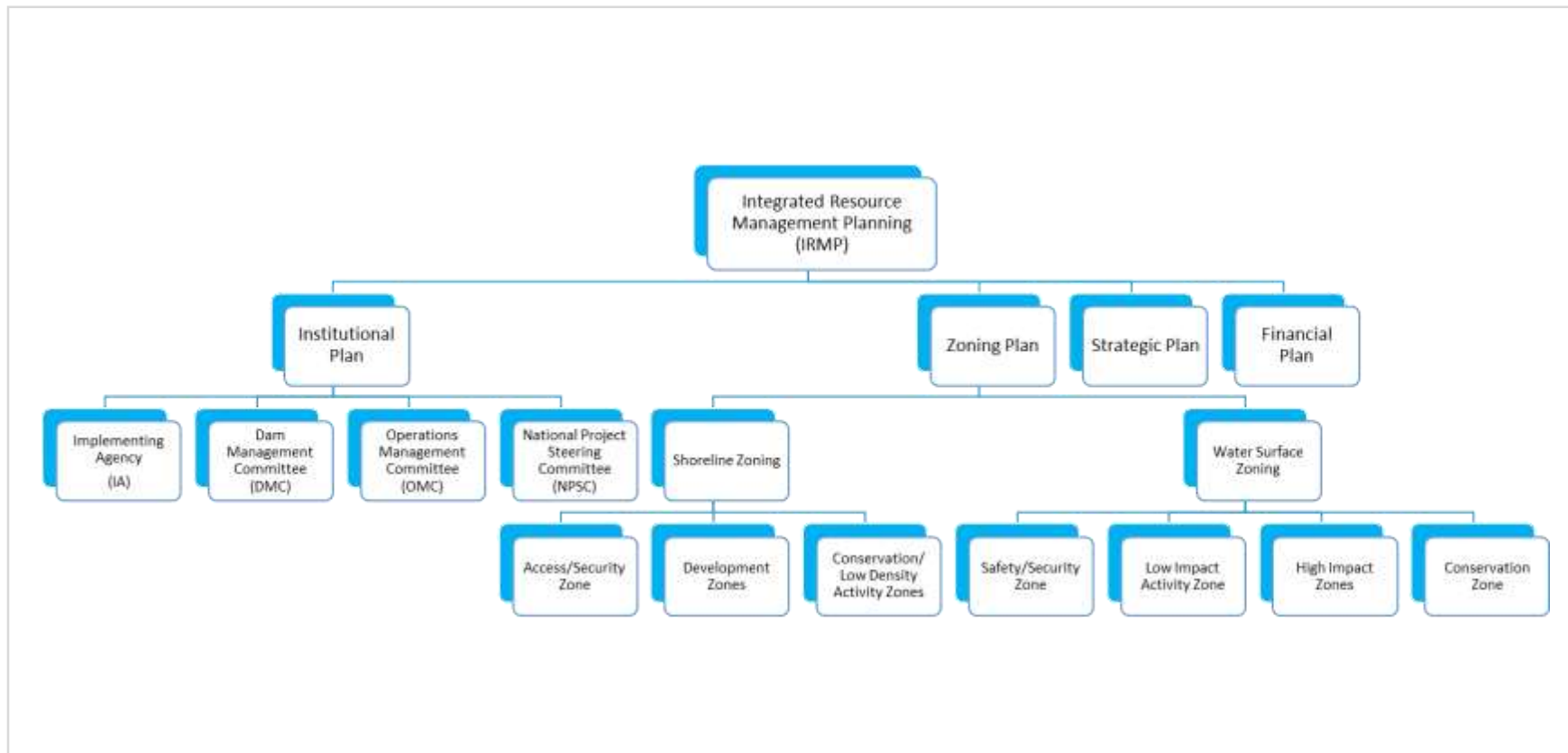


Figure 7: Integrated Resource Management Planning

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 programme 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 action 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 Dam management objectives and decisions pertaining to the relevant stakeholders; and
- Assist in the management of the incident management system and wash bays.

Figure 8 shows the proposed parties to form part of the DMC for Loerie Dam.

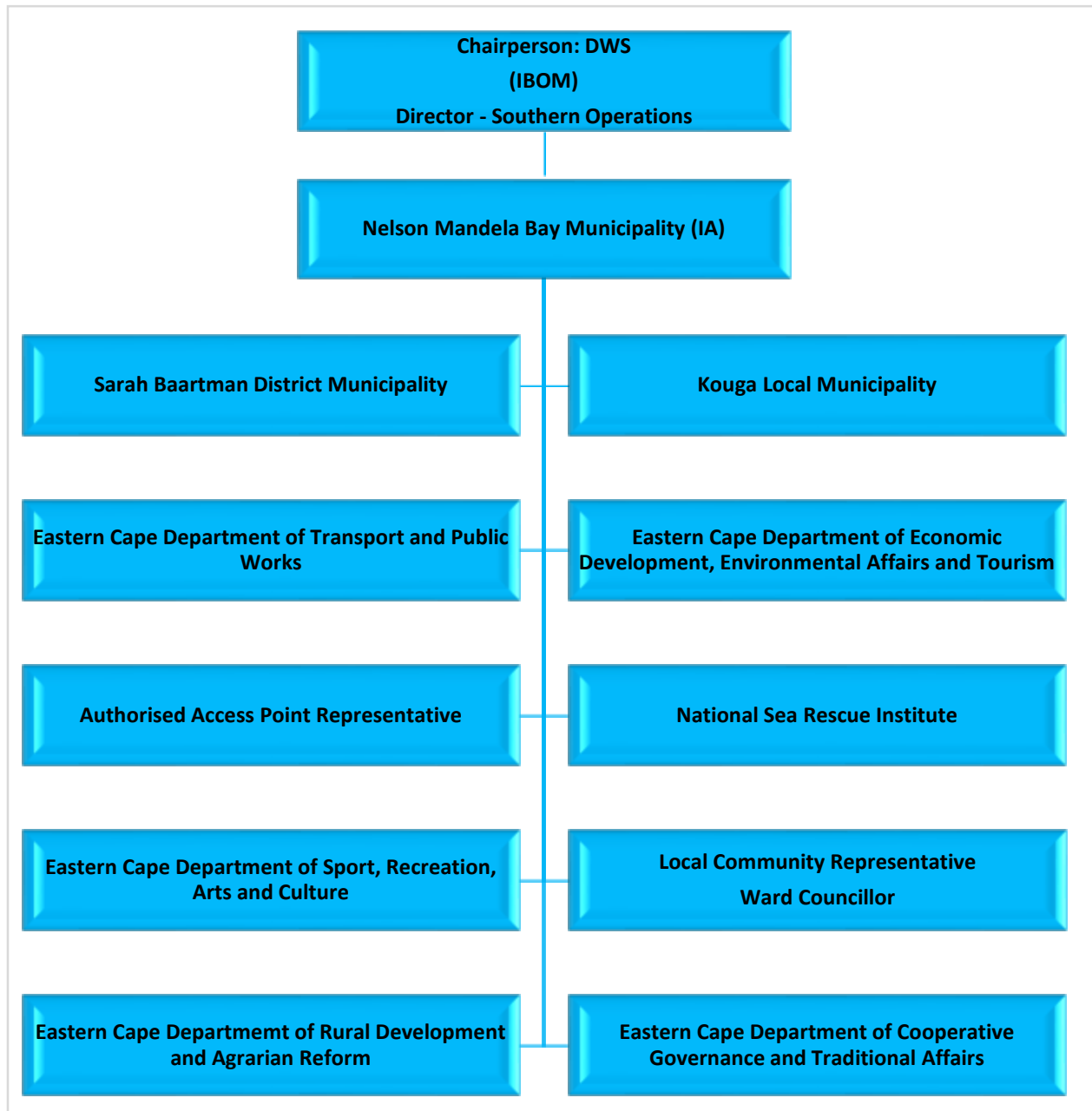


Figure 8: Proposed DMC

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 the 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 9**.

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**).

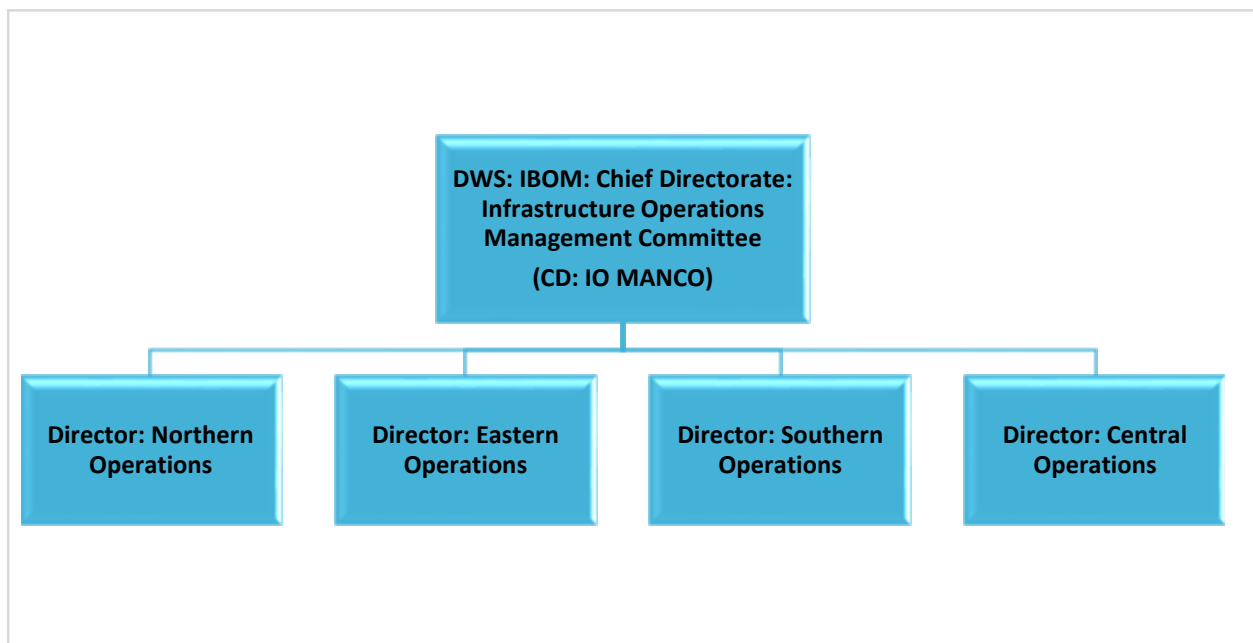


Figure 9: Existing CD: IO MANCO

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 10** shows government departments (also referred to as planning partners and/ or authorities) and agencies that will form part of the NPSC:



Figure 10: 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.

Table 9 and **Figure 11** shows the proposed water surface zoning for Loerie Dam.

LOERIE DAM RESOURCE MANAGEMENT PLAN

Table 9: 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 Canoeing Aquaculture facilities 	<ul style="list-style-type: none"> Motorised boating Water skiing House boats Para-sailing Kite-surfing Jet Skis Wind surfing Kite surfing Rowing 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.

LOERIE DAM RESOURCE MANAGEMENT PLAN

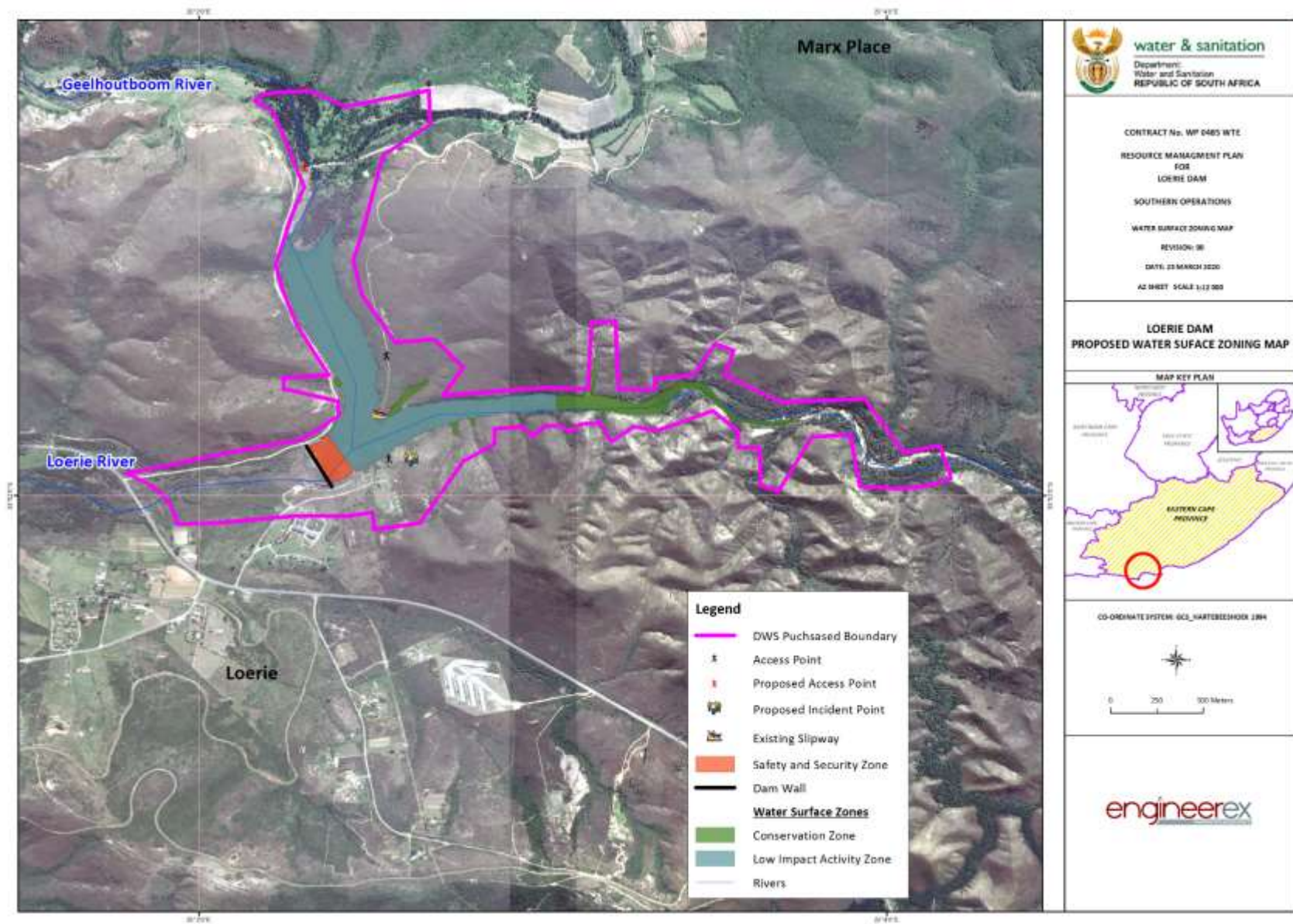


Figure 11: Proposed Water Surface Zoning Map

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 10 and **Figure 12** and **13** shows the proposed shoreline and overall zoning for Loerie Dam.

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

LOERIE DAM RESOURCE MANAGEMENT PLAN

Table 10: 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 conducted 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 IA and 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.

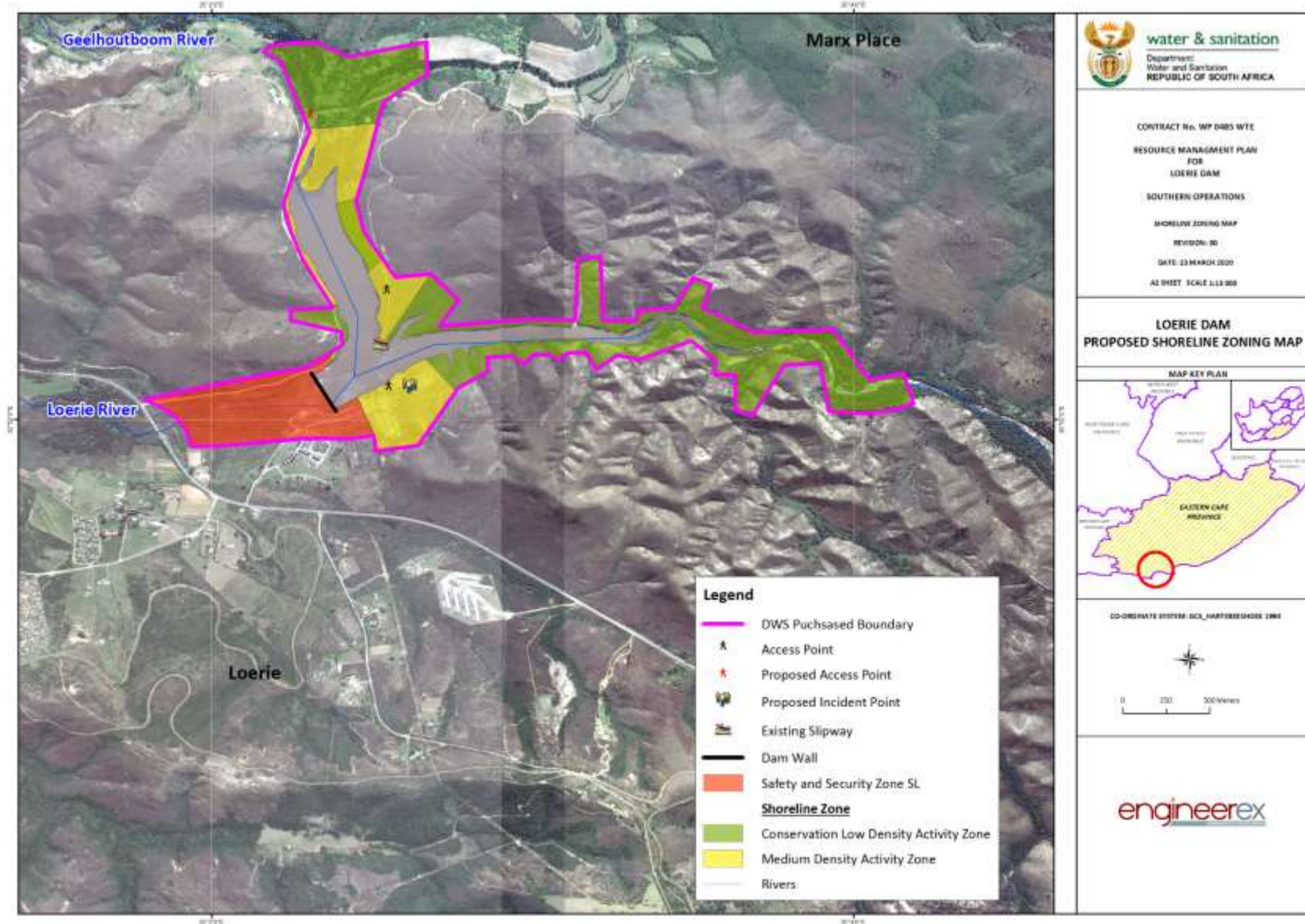


Figure 12: Proposed Shoreline Zoning Map

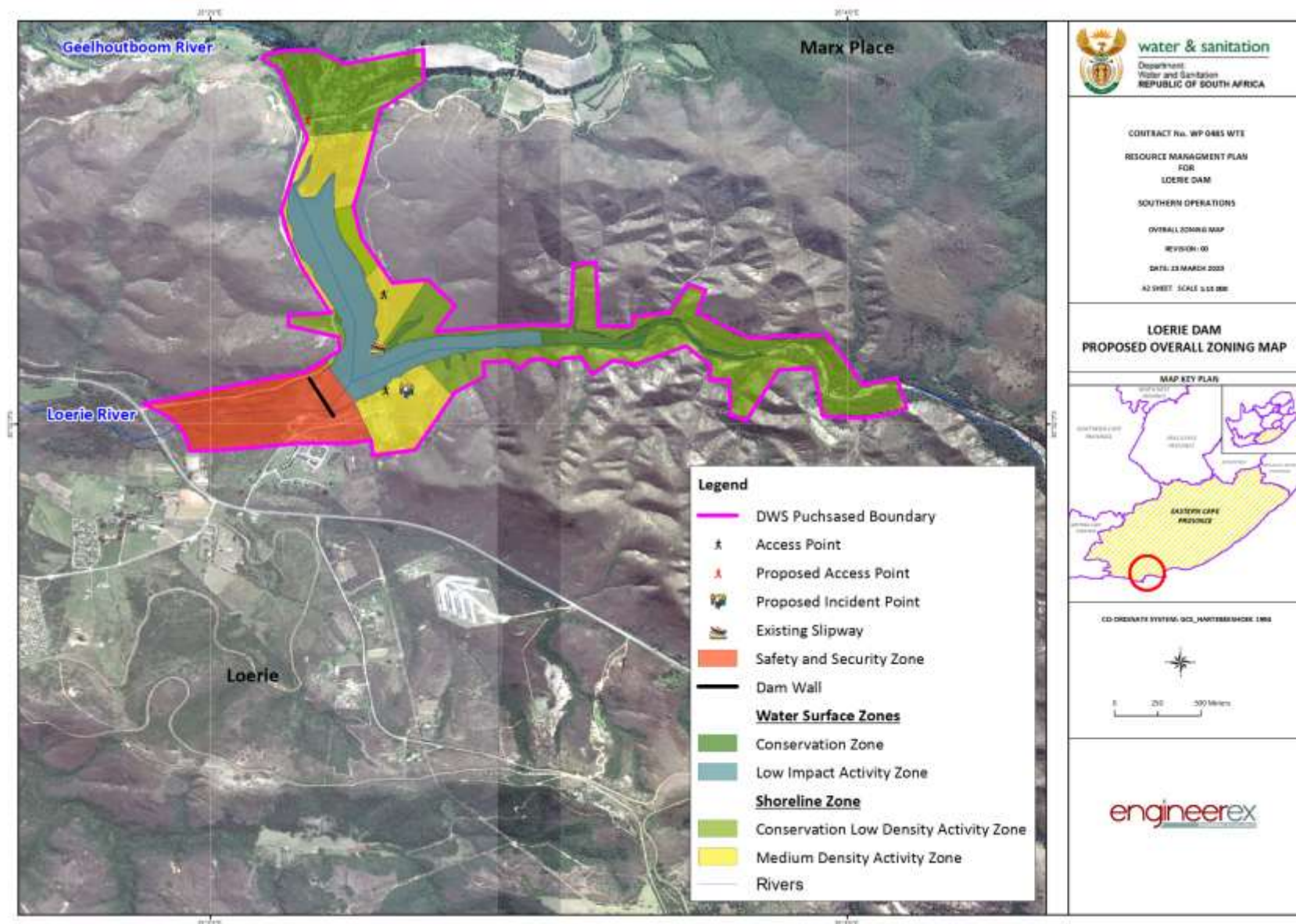


Figure 13: Proposed Overall Zoning Map

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 11 shows the type of craft and the required area for use.

Table 11: Area required per user

Craft	U/A (ha/craft)
Angling	3.0
Canoe	1.0
Paddle boating	1.0
Sailing	5.0
Boat cruise	3
Average	2.6

Based on the table above the average hectare per user is 2.6 ha (26 000 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 Loerie Dam is **52 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: $PCC = A \div U/a \times Rf$
 $= 52 \times 1/5 \times 1$
 $= 10 \text{ crafts on the Dam}$

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 Loerie Dam, these factors includes sensitive areas, such as conservation areas (5 ha) as well as aspects regarding the safe operation and management of the Dam (3 ha).

These factors accounts for 8 ha, that is 15% of the area that is not available for recreational use.

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

$$= 10 \times (100 - 15) \% / 100$$

$$= 8 \text{ crafts}$$

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. Also, there is 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 12 to 14**, the strategic plan on how to achieve the objectives identified for the Dam is outlined.

4.3.1 KPA 1: Resource Management

Table 12: 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)
<u>Water quality:</u> <ul style="list-style-type: none"> To improve the water quality at the Dam as well as the river. 	<ul style="list-style-type: none"> The water quality is a key issue that needs to be addressed to ensure sustainable use of the dam by all. During a site inspection it was mentioned that there is a sewage leakage that causes water pollution in the dam as well as the river which is feeding the dam. 	<ul style="list-style-type: none"> Water monitoring points should be established and monitored regularly in order to find out the source and extent of the pollution. Develop a programme for monitoring and reporting, and initiate the monitoring of water quality. Set Resource Quality Objectives for the water quality at the dam. 	<ul style="list-style-type: none"> DWS IA (NMBM) with the support of DMC
<u>Water quantity:</u> <ul style="list-style-type: none"> To raise the dam wall in order to increase the storage capacity of the Dam. 	<ul style="list-style-type: none"> The local community members believe that if the dam wall is raised, the storage capacity of the dam will increase and this will open diverse recreational opportunities at the dam. 	<ul style="list-style-type: none"> DWS Regional office to investigate if it is feasible to raise the dam wall or not. The raising of the Dam wall will depend on the outcome of the investigation by the regional office. 	<ul style="list-style-type: none"> DWS
<u>Alien Plants Control:</u> <ul style="list-style-type: none"> To prevent the regeneration of alien plants species within the dam's surrounds. 	<ul style="list-style-type: none"> The Dam and its surrounds had alien plants species such as blue gum and black wattle in the past which have been removed / cleared by the Working for Water programme through the Expanded Public Works Programme. 	<ul style="list-style-type: none"> Monitor the areas which were infested by Alien Invasive plants for regrowth. Rehabilitate invasive alien vegetation infested areas with suitable species indigenous to the area. 	<ul style="list-style-type: none"> DWS DEDEAT IA (NMBM) with the support of DMC
<u>Recreational Institutional Structure:</u> <ul style="list-style-type: none"> To establish an effective and functional institutional structure inclusive of community representation to manage recreational activities and access. 	<ul style="list-style-type: none"> Currently, there is no organisation or appointed institutional structure that is managing the dam for access and recreational use. Loerie Dam Nature Reserve is currently not used due to lack of a proper management structure to manage and market it properly. According to the RMP guidelines, an effective institutional structure must be established. In terms of DWS considerations on the Institutional 	<ul style="list-style-type: none"> DWS to appoint NMBM as a proposed IA to oversee the implementation of the Loerie Dam RMP. DWS and IA to enter into a MOA where roles and responsibilities are clearly outlined. 	<ul style="list-style-type: none"> DWS

LOERIE DAM RESOURCE MANAGEMENT PLAN

	Arrangements for Managing Use of Water for Recreational Purposes guideline, 2003.		
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4.3.2 KPA 2: Resource Utilisation

Table 13: 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 access:</u> <ul style="list-style-type: none"> To ensure that there is adequate and equitable public access to the water surface for angling and boat launching. 	<ul style="list-style-type: none"> Where the picnic site is located there is no access to the water surface and as such local community members vandalise the fence to forcefully gain access to the water surface for fishing. There is no slipway designated for public use. 	<ul style="list-style-type: none"> An agreement needs to be entered into by DWS and the entity which will manage and operate public facilities. Public access should be provided and the entry fees need to be reasonable to ensure that the dam remains accessible and affordable to the local community. 	<ul style="list-style-type: none"> IA (NMBM) with the support of DMC DWS
<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 of fishing at the Loerie Dam to sustain livelihood. however, there is no designated area for fishing at the dam. 	<ul style="list-style-type: none"> Permits (fishing license) must be obtained and the use of gill nets must be prevented, as it has significant negative impact on fish population within the Dam. Educate and train community members on fishing methods that are safe and sustainable. Preserve the core habitats for nesting, resting, feeding and breeding of fish within the inlets, by demarcating areas for subsistence fishing. Management authority or DWS must develop a communication signage in order to effectively inform angling groups regarding Dam fishing rules. Appoint and train safety officers from the communities to monitor compliance of the Dam fishing rules. 	<ul style="list-style-type: none"> Eastern Cape Department of Rural Development and Agrarian Reform (DRDAR) DEFF IA (NMBM) with the support of DMC DWS
<u>Aquaculture:</u> <ul style="list-style-type: none"> To investigate the feasibility of introducing aquaculture project at the dam. 	<ul style="list-style-type: none"> To promote sustainable harvesting of fish at the dam. Fisheries have the opportunity to provide nutrition, food security, sustainable livelihoods and 	<ul style="list-style-type: none"> Conduct a feasibility study to get a comprehensive information on the viability of the project e.g the soil type for its stability in cases ponds are to be constructed, water quality parameters, 	<ul style="list-style-type: none"> DRDAR DEFF IA (NMBM) with the support of DMC DWS

LOERIE 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)
	poverty alleviation to the local community.	size to be demarcated for aquaculture, targeted production etc. <ul style="list-style-type: none"> Incorporate the objective in a Business Plan to determine projected costs for the implementation of the action projects required to introduce aquaculture at the dam. 	
<u>Picnic site refurbishment:</u> <ul style="list-style-type: none"> Refurbishment of the picnic site at the dam. 	<ul style="list-style-type: none"> The picnic site facilities have been vandalised and are not in good condition hence they need to be refurbished. 	<ul style="list-style-type: none"> Incorporate the objective in a Business Plan to determine projected costs for the implementation of the action projects required to refurbish the day visitor's area. 	<ul style="list-style-type: none"> IA (NMBM) with the support of DMC
<u>Swimming pools:</u> <ul style="list-style-type: none"> To construct swimming pools at the dam. 	<ul style="list-style-type: none"> Local community members do not have access to the water surface and as such it is recommended to build swimming pools at the dam for public use. There are reported incidences of drowning that occurred in the past. There is water pollution at the dam and river and as such it is not safe to swim inside the dam. 	<ul style="list-style-type: none"> To construct swimming pools at the dam. Appoint safety officers to monitor access to the dam and to ensure that the swimming safety rules are adhered to at all times. Develop information material (i.e. signage and pamphlets, etc.) to convey safety rules at the dam. DWS to involve SwimSA in dams where drowning is an issue. 	<ul style="list-style-type: none"> SwimSA IA (NMBM) with the support of DMC DWS
<u>Revive the nature reserve:</u> <ul style="list-style-type: none"> To revive and improve the Loerie Dam Nature Reserve. 	<ul style="list-style-type: none"> The Loerie Dam Nature Reserve is no longer in use and it needs to be revived and maintained to attract tourists in the area. 	<ul style="list-style-type: none"> Incorporate the objective into the Business Plan to determine finances that will be required to refurbish the nature reserve. Establish sources of funding for the refurbishing process. 	<ul style="list-style-type: none"> IA (NMBM) with the support of DMC SBDM DWS
<u>Recreational Facilities:</u> <ul style="list-style-type: none"> To establish tourism facilities such as B&Bs, conference centres and recreational activities including hiking, bird watching, and other water sports at the dam. 	<ul style="list-style-type: none"> Currently there is no recreational activities taking place at the dam or functional recreational facilities to cater for tourists and locals.. If more tourism facilities are put in place, they will open economic 	<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. 	<ul style="list-style-type: none"> IA (NMBM) with the support of DMC DWS

LOERIE 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>opportunities to the area within which the dam is located.</p> <ul style="list-style-type: none"> To encourage people with arts and craft talent to display and market their work to visitors at the dam. 	<ul style="list-style-type: none"> Market the Dam for recreational use and tourism. 	

4.3.3 KPA 3: Benefit Flow Management

Table 14: 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)
<p>Skills Development Programmes:</p> <ul style="list-style-type: none"> To uplift the local economy and increase benefit flow to the surrounding communities through meaningful 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. High level of unemployment in the area. 	<ul style="list-style-type: none"> Implement skills development programmes where opportunities exist. Implementation of environmental awareness within local communities and ensuring continuous updated with environmental information. Educate and train the community on utilising 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 job opportunities arise. 	<ul style="list-style-type: none"> IA (NMBM) with the support of DMC

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, as well as to ensure the sustained and improved management of the Dam.

The proposed IA (NMBM) 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:

- Loerieheuwel Township;

- Hankey Town;
- Jeffery's Bay Town;
- Farmers;
- 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 IA (NMBM) 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 IA 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 Loerie 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:

- There are water quality issues at the Dam as well as the river;
- The existing development upstream of the Dam is believed to negatively impact the dam's water quality especially during rainy season;
- Inadequate fencing;
- To regulate the livestock of the local farmer that is grazing and drinking at the Dam;
- There is no security personnel to oversee the recreational use or subsistence fishing at the Dam;
- There have been three (3) drowning incidences reported at the Dam;
- Vandalism of infrastructure such as fence and ablution facilities;
- Unauthorized access to the Dam;
- Drought may have a negative impact on the implementation of the RMP and may also hinder community participation;
- The possible regrowth of the AIPs in the area will threaten the indigenous plants species;
- Shoreline vegetation around the Dam is threatened by overgrazing from livestock which may also cause soil erosion issues;
- Uneven surface and lack of access to the water surface at the picnic site has resulted in people not using the area for recreational purposes;

- Communities have high expectations so their expectations have to be met otherwise they can be very negative and hostile;
- Lack of skills as the majority of the residents have not furthered their education up to higher level;
- Majority of residence do not have any source of income and are living below the poverty datum line, representing a standard of living attained by a person to be deemed poor; and
- There is no management structure to oversee access and the potential recreational use of the Dam.

Recommendations:

This RMP recommends the appointment of an IA with the mandate to:

- To manage recreational use of the Dam on behalf of DWS;
- Establishment Dam Management Committees (DMC) to serve as an advisory committee to the proposed IA;
- 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.

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 14** illustrates the RMP & BP review framework.

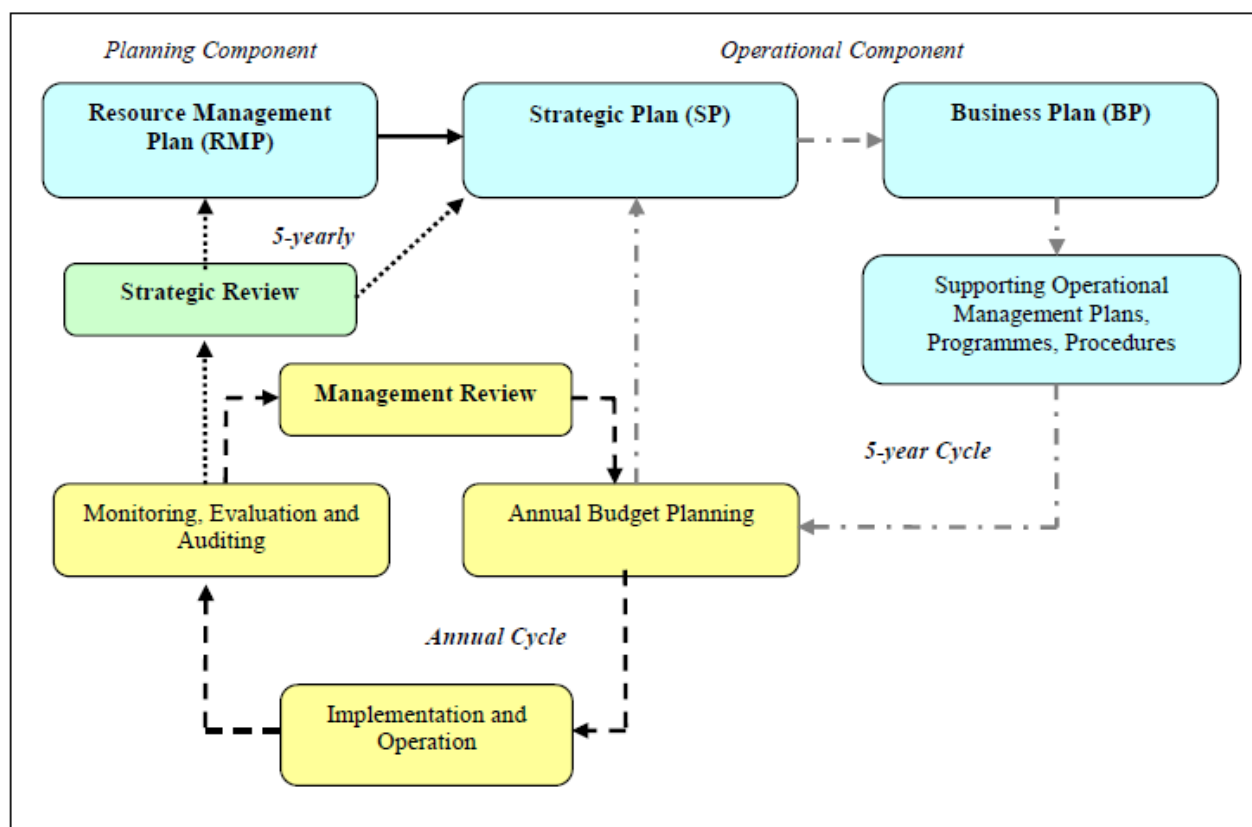


Figure 14: RMP and BP Review Framework

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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