

Resource Management Plan **KOMMANDODRIFT DAM**

REPORT – Volume 4 of 5

March 2020



WATER IS LIFE - SANITATION IS DIGNITY

www.dws.gov.za



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA



Prepared by:

ENGINEEREX (PTY) LTD

107 Haymeadow Street
Boardwalk Office Park
Faerie Glen
Pretoria
0043

Tel: 012 999 4900

Website: www.engineerex.co.za

Prepared for:

DEPARTMENT OF WATER AND SANITATION

Private Bag X313
Pretoria
0001

Tel: 012 336 7592

Fax: 012 324 6692

Website: www.dws.gov.za

ACKNOWLEDGEMENTS

Engineerex (Pty) Ltd would like to express its gratitude to the following stakeholders that contributed to the development of this Resource Management Plan for Kommandodrift Dam:

- Department of Water and Sanitation;
- Eastern Cape Department of Transport: Maritime Safety;
- Eastern Cape Department of Rural Development and Agrarian Reform;
- Eastern Cape Department of Economic Development, Environmental Affairs and Tourism;
- Great Fish River Water User Association;
- Inxuba Yethemba Local Municipality;
- Enoch Mgijima Local Municipality;
- Chris Hani District Municipality;
- Cooperative Governance and Traditional Affairs;
- Traditional Authorities;
- Ward Councillors of Ward 06 of Inxuba Yethemba Local Municipality and Ward 34 of Enoch Mgijima Local Municipality; and
- Community members of Tarkastad and Hofmeyr.

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

TITLE AND APPROVAL PAGE

Recommended:

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

Approved:

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

Review:

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

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

AMENDMENTS PAGE

Revision No	Description	Date
0	Draft RMP for DWS Review	04/02/2020
1	Amended Draft RMP for DWS Review	07/02/2020
2	Amended Draft RMP for DWS Review	09/03/2020
3	Final Draft RMP for DWS Approval	23/03/2020
4	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 Kommandodrift 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 Planning for the Use of Water for Recreational Purposes (DWAF, 2004) and in accordance with the requirements in Section 2, 26 and 113 of the National Water Act, 1998 (Act No. 36 of 1998) [NWA].

Mandate of Department of Water and Sanitation: The Department of Water and Sanitation (DWS), through the National Water Act, 1998 (Act No. 36 of 1998) [NWA], mandates the minister as the custodian of the nation's water resources. Part of the duties that the minister has are to ensure that the government waterworks (GWWs) including Kommandodrift Dam, are protected, used, developed, managed and controlled in a sustainable manner, to the benefit of all, 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 to the absence of a management tool;
- Public safety with regards to the use of inland vessels; and
- Uncontrolled developments within the Dam basin.

Community Participation and Beneficiation:

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

Public Policy:

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

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

Description and Location of the Dam: The Dam has an earthfill and rockfill type of Dam wall which impounds the Tarka River. The construction of the Dam was completed in 1956. At full capacity the Dam has a water surface area of approximately 879 hectares with a capacity of 58.9 million cubic meters.

The Dam is situated within the Commando Drift Nature Reserve (CDNR) on the municipal boundary of Inxuba Yethemba Local Municipality (IYLM) and Enoch Mgijima Local Municipality (EMLM) within the jurisdiction of the Chris Hani District Municipality (CHDM) in the Eastern Cape Province of South Africa. The centre point co-ordinates of the Dam are 32°06' 31"S 26°02'30"E

Purpose of the Dam: The primary purpose of the Dam is to provide bulk raw water for irrigation and domestic use. The CDNR offers shoreline fishing, game viewing, hunting, picnicking, camping and overnight accommodation.

Dam Ownership and Management DWS owns Kommandodrift Dam and Great Fish River Water User Association (GFRWUA), manages and operates the Dam for primary purposes. Currently there is no institutional structure managing the Dam for secondary (recreational) use. Through the process of developing the RMP, a proposed Implementing Agency (IA), such as Eastern Cape Parks and Tourism Agency (ECPTA), shall be appointed by DWS to facilitate the implementation of the objectives and identified projects in line with the requirements of the Kommandodrift 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 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 remove alien invasive plant species around the Dam;
- To provide equitable and compatible access control at the Dam;
- To build more chalets at the Dam;
- To use the Dam to host wedding events;
- To introduce aquaculture and fisheries at the Dam;
- To promote sustainable subsistence fishing at the Dam;
- To introduce water sports at the Dam;
- To introduce angling and shoreline fishing at the Dam;
- To establish a day spa at the nature reserve;
- To establish overnight accommodation at the nearest town for tourist visiting the Dam;
- To establish shops at a nearby town to sell food and artefacts for tourist;
- To market the Dam to tourists and local communities;
- To introduce school tours for the purpose of environmental and biodiversity education;
- To establish awareness programs to educate local communities about the importance of protecting and conserving water resources;
- 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 have a world class tourist destination with proper infrastructures that are well managed and ensuring equitable access for all through community participation and beneficiation."

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

- Addition of chalets and establishing new B&Bs in the nearby town;
- Market the Dam; and
- Introduce day spa Commando Drift Nature Reserve.

accommodate is covered under Carrying Capacity in section 4.2.3.

The key challenges identified include:

- Uncertainty relating to the fitness of the water for recreational use owing to the absence of test samples for all water quality constituents (DWAF, 1996);
- There are records of alien invasive plant species at the Dam such as prickly pear and Australian reeds;
- The Dam is silted;
- The area where the Dam is located is currently experiencing drought;
- Incidents of game being stuck on mud while trying to reach for deeper parts of the Dam for water have been reported;
- Dead fish at the Dam have been reported due to drought;
- Water sport such as canoeing used to be a permissible activities at the nature reserve however, due to unforeseen incident that occurred in the past it was phased out; and
- Lack of community beneficiation.

Recommendations:

This RMP recommends the following immediate actions:

- Appoint the proposed ECPTA as an IA to manage recreational use of the Dam on behalf of DWS;
- Establishment of a Dam Management Committee (DMC) to serve as an advisory committee to the proposed IA;
- To avoid conflict amongst users, uncontrolled development and to protect the water resource, the permissible and non-permissible activities on the water- and shoreline surface are delineated in the Zoning Plan and covered under Section 4.2; and
- To ensure public safety with regards to the use of inland vessels, the maximum level of recreational use the water resource can

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
TITLE AND APPROVAL PAGE.....	iii
AMENDMENTS PAGE	iv
EXECUTIVE SUMMARY	v
LIST OF ACRONYMS	xii
CHAPTER 1: INTRODUCTION	1
1.1 BACKGROUND.....	1
1.2 PURPOSE OF THIS RMP	1
1.3 DESCRIPTION AND LOCATION OF THE DAM	2
1.4 PURPOSE OF THE DAM	2
1.5 DAM OWNERSHIP AND MANAGEMENT	2
1.6 LEGISLATIVE FRAMEWORK.....	4
CHAPTER 2: ENVIRONMENTAL ANALYSIS.....	8
2.1 BIOPHYSICAL ENVIRONMENT.....	8
2.1.1 Climate	8
2.1.2 Topography	8
2.1.3 Geology and Soil	8
2.1.4 Flora.....	10
2.1.5 Fauna	10
2.2 BUILT ENVIRONMENT	10
2.2.1 Roads and Land-Based Transportation.....	10
2.2.2 On-site Facilities	10
2.2.3 Management and Operation	10
2.2.4 Safety	11
2.3 SOCIO-ECONOMIC ENVIRONMENT	11
2.3.1 Community Beneficiation	16
CHAPTER 3: RESOURCE MANAGEMENT PLAN PROCESS.....	17
3.1 DEFINITION OF RMP	17
3.2 PROCESS TRIGGERS	17
3.3 RMP DEVELOPMENT PROCESS.....	19
3.4 RMP PLANNING STAGES	20
3.4.1 Desktop Study	20
3.4.2 Site Inspection	20
3.4.3 Public Participation.....	20
3.4.4 Planning Partners	21

3.5	RMP DATA ANALYSIS.....	24
3.5.1	Encumbrance Survey (Phase 2)	24
3.5.2	SWOT Analysis and Objective Identification	24
3.5.3	Research/ Information Generation (Phase 4)	26
CHAPTER 4:	INTEGRATED RESOURCE MANAGEMENT PLANNING	28
4.1	INSTITUTIONAL PLAN	30
4.1.1	Implementing Agency (IA)	30
4.1.2	Dam Management Committee (DMC)	30
4.1.3	Agreements and Permits	32
4.1.4	Operations Management Committee (OMC)	33
4.1.5	National Project Steering Committee (NPSC)	33
4.2	ZONING PLAN.....	35
4.2.1	Water Surface Zoning	35
4.2.2	Shoreline Zoning.....	38
4.2.3	Carrying Capacity.....	43
4.3	STRATEGIC PLAN	44
4.3.1	KPA 1: Resource Management	45
4.3.2	KPA 2: Resource Utilisation	46
4.3.3	KPA 3: Benefit Flow Management.....	48
4.4	FINANCIAL PLAN.....	50
4.4.1	Potential Sources of Revenue.....	50
4.4.2	Target Market.....	50
4.4.3	Co-Funding	50
CONCLUSION AND WAY FORWARD		52
REFERENCES.....		54
APPENDICES.....		55
APPENDIX A	: STAKEHOLDER DATABASE REGISTER.....	55
APPENDIX B	: BACKGROUND INFORMATION DOCUMENT (BID)	55
APPENDIX C	: NEWSPAPER ADVERT	55
APPENDIX D	: FLYERS	55
APPENDIX E	: EMAILS	55
APPENDIX F	: COMMENT AND RESPONSES REGISTER.....	55
APPENDIX G	: EXAMPLES OF SUCCESSFULLY CO-FUNDED PROJECTS	55
APPENDIX H	: POTENTIAL CO-FUNDERS	55
APPENDIX I	: BUSINESS PLAN.....	55

LIST OF FIGURES

Figure 1: Locality Map for Kommandodrift Dam	3
Figure 2: Topography around Kommandodrift Dam	8
Figure 3: Fluctuations of Kommandodrift Dam water level over a year.	9
Figure 4: Inxuba Yethemba Local Municipality Ward 06	12
Figure 5: Enoch Mgijima Local Municipality Ward 34	12
Figure 6: Educational Level of Ward 6 versus IYML	13
Figure 7: Educational Level of Ward 34 versus EMLM	14
Figure 8: Individual Monthly Income for Ward 06 versus IYLM	15
Figure 9: Individual Monthly Income for Ward 34 versus EMLM	15
Figure 10: RMP Procedure	19
Figure 11: Integrated Resource Management Planning	28
Figure 12: Proposed DMC	31
Figure 13: Existing CD: IO MANCO	33
Figure 14: Proposed NPSC	34
Figure 15: Proposed Water Surface Zoning	37
Figure 16: Proposed Shoreline Zoning Map	41
Figure 17: Proposed Overall Zoning Map	42
Figure 18: RMP and BP Review Framework	53

LIST OF TABLES

Table 1: Kommandodrift Dam Profile	2
Table 2: Key Data Sources Used to Develop the RMP:	4
Table 3: Legislative Framework Applicable to the Management and Use of the Dam for Recreational Purposes	5
Table 4: List of alien invasive plant species found in Commando Drift Nature Reserve and Rooiberg area	10
Table 5: Educational Level of Ward 6 versus IYLM	13
Table 6: Educational Level of Ward 34 versus EMLM	14
Table 7: Summary of triggers and potential challenges for Kommandodrift Dam	17
Table 8: Planning Partners and their Respective Mandates	22
Table 9: Summary of Biophysical and Socio-cultural Encumbrances	24
Table 10: SWOT Analysis for Kommandodrift Dam	25
Table 11: Proposed Water Surface Zoning Description	36
Table 12: Proposed Shoreline Zoning Description	39
Table 13: Area required per user	43
Table 14: Strategic Plan for KPA 1: Resource Management	45
Table 15: Strategic Plan for KPA 2: Resource Utilisation	46
Table 16: Strategic Plan for KPA 3: Benefit Flow Management	48

LIST OF ACRONYMS

AtoN	Aids to Navigation
B&B	Bed and Breakfast
BBBEE	Broad Based Black Economic Empowerment
BID	Background Information Document
BP	Business Plan
CATHSSETA	Culture, Arts, Tourism, Hospitality, Sports Sector, Education and Training Authority
CD: IO MANCO	Chief Directorate: Infrastructure Operations Management Committee
CDNR	Commando Drift Nature Reserve
CHDM	Chris Hani District Municipality
CIWSP	Cooperative Inland Watercourse Safety Programme
CoGTA	Cooperative Governance and Traditional Affairs
DAC	Department of Arts and Culture
DEA	Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries
DMC	Dam Management Committee
DoT	Department of Transport
DPW	Department of Public Works
DRDLR	Department of Rural Development and Land Reform
DSR	Department of Sports and Recreation
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
ECC	Effective Carrying Capacity
ECPTA	Eastern Cape Parks and Tourism Agency
EIA	Environmental Impact Assessment
EMLM	Enoch Mgijima Local Municipality
FP	Financial Plan
GIAMA	Government Immovable Asset Management Act, 2007 (Act No.19 of 2007)
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
IYLM	Inxuba Yethemba Local Municipality
LAAP	Local Accountable Aton Parties
MOA	Memorandum of Agreement
NDT	National Department of Tourism
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management Biodiversity Act, 2004 (Act No.10 of 2004)
NEMPAA	National Environmental Management Protected Areas Act, 2003 (Act No.56 of 2003)
NPSC	National Project Steering Committee
NT	National Treasury
NWA	National Water Act, 1998 (Act No. 36 of 1998)
OMC	Operations Management Committee

PAMP	Protected Areas Management Plan
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
SAMSA	South African Maritime Safety Authority
SAPS	South African Police Service
SASCOC	South African Sports Confederations and Olympic Committee
SDF	Spatial Development Framework
SWOT	Strengths, Weaknesses, Opportunities and Threats
ToR	Terms of Reference
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 ensure that the government waterworks (GWWs), including the Kommandodrift 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 between users due to the absence of a management tool in place;
- Public safety with regards to the use of inland vessels; and
- Uncontrolled developments within Dam basin.

Community Participation and Beneficiation:

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

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

Public Policy:

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

In fulfilling this mandate the Minister, the DWS initiated and commissioned the development of the RMP and Business Plan (BP) for Kommandodrift 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 purposes (secondary use). 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 Kommandodrift 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 Planning for the Use of Water for Recreational Purposes (DWAF, 2004) for the Kommandodrift Dam, and 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.

1.3 DESCRIPTION AND LOCATION OF THE DAM

The Kommandodrift Dam has an earthfill and rockfill type of Dam wall that impounds the Tarka River. The construction of Kommandodrift Dam was completed in 1956. At full capacity the Dam has a water surface area of approximately 879 hectares with a capacity of 58.9 million cubic meters. **Table 1** shows the Dam profile.

The Dam is situated within Commando Drift Dam Nature Reserve (CDNR) on the municipal boundaries of Inxuba Yethemba Local Municipality (IYLM) and Enoch Mgijima Local Municipality within the jurisdiction of the Chris Hani District Municipality (CHDM) in the Eastern Cape Province of South Africa, as shown in **Figure 1**. The centre point co-ordinates of the Dam are 32°06' 31"S and 26°02'30"E.

1.4 PURPOSE OF THE DAM

The primary purpose of the Dam is to provide bulk raw water for irrigation and domestic use.

The CDNR currently offers shoreline fishing, game viewing, hunting, picnicking, camping and overnight accommodation. Currently there is no recreational institutional structure to manage the dam.

1.5 DAM OWNERSHIP AND MANAGEMENT

DWS owns the Dam and Great Fish River Water User Association (GFRWUA), manages and operates the Dam for primary purposes. Currently there is no institutional structure managing the Dam for recreational purposes. Through the process of developing the RMP, a proposed Implementing Agency (IA), such as ECPTA, shall be appointed by DWS to facilitate the implementation of the objectives and identified projects in line with the requirements of the Kommandodrift Dam RMP on behalf of DWS.

Table 1: Kommandodrift Dam Profile

Kommandodrift Dam Profile	
Location	South Africa
Province	Eastern Cape
District Municipality	Chris Hani
Local Municipalities	Inxuba Yethemba and Enoch Mgijima
Completion Year	1956
Coordinates	32°06'31"S 26°02'30"E
Purpose	Irrigation
Owner	DWS
Quaternary Catchment	Q14D
Water Management Area	Mzimvubu to Tsitsikamma
River	Tarka River
Capacity (Mm ³)	589
Surface area (ha)	879
Wall type	Earthfill and Rockfill
Wall Height (m)	38
Crest Length (m)	518

Source: Adapted from the Department of Water and Sanitation (List of registered Dams; February 2016)

KOMMANDODRIFT DAM RESOURCE MANAGEMENT PLAN

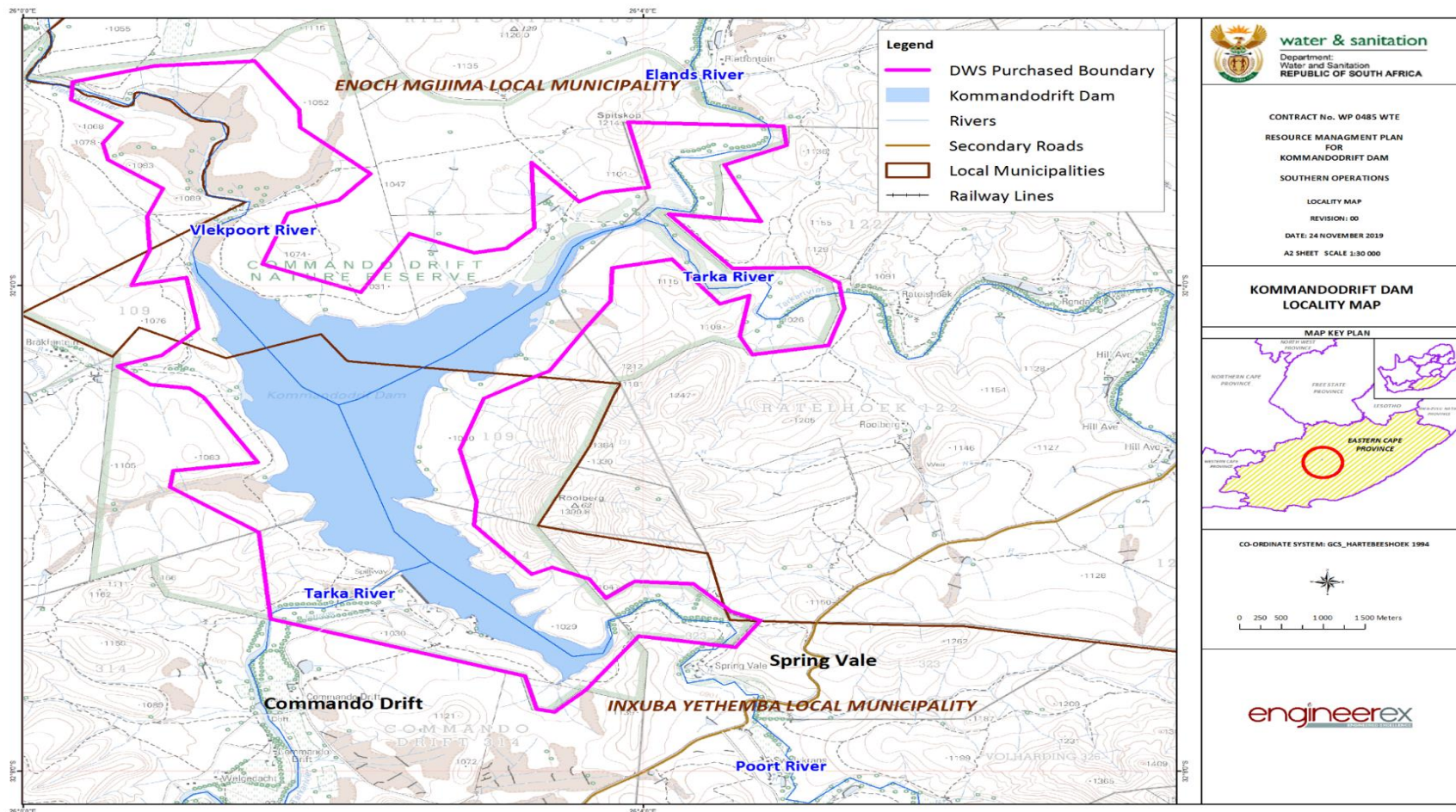


Figure 1: Locality Map for Kommandodrift Dam

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:

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 carrying capacity of a water resource represents the maximum level of visitor/recreational use and related infrastructure that the water resource and surrounding area can accommodate, without diminishing user satisfaction or adverse impacts upon the local or host community, the economy and culture of the area.
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)	Section 24 – “Everyone has the right: 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- 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]	“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”. “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”.
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

KOMMANDODRIFT DAM RESOURCE MANAGEMENT PLAN

Legislation: Acts, ordinances, bylaws	Relevance: Description
	minimum standards in respect of immovable asset management by a national or provincial department; and to provide for matters incidental thereto".
Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000)	"To provide for the manner in which municipal powers and functions are exercised and performed; to provide for community participation; to establish a simple and enabling framework for the core processes of planning, performance management, resource mobilisation and organisational change which underpin the notion of developmental local government".
Merchant Shipping (National Small Vessel Safety) Regulations (2007)	"These Regulations provide <i>inter alia</i> for requirements for vessel safety; crewing requirements and responsibilities; controlled events such as competitions and regattas; and responsibilities of authorised agencies (governing boards/clubs/organisations and regulating authorities). These Regulations apply to the Department of Water and Sanitation as they are applicable to all inland and sheltered waters and as the Department and its agencies are allowing access to government waterworks for recreational boating vessels".
National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA]	"NEMA serves as South Africa's Environmental Framework Legislation. It was designed to provide for co-operative and Integrated Environmental Governance by establishing a general framework for decision-making on matters affecting the environment".
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) [NEMBA]	"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

KOMMANDODRIFT DAM RESOURCE MANAGEMENT PLAN

Legislation: Acts, ordinances, bylaws	Relevance: Description
	state owned land may be made available for recreational purposes, subject to controls determined by the Minister and regulations made by the Minister”.
Occupational Health and Safety Amendment (Act No. 181 of 1993G.15369 GoN. 2471)	“It requires the employer to bring about and maintain, as far as reasonably practicable, a work environment that is safe and without risk to the health of the workers. The workers and the employer must share the responsibility for health and safety in the workplace”.
Public Finance Management Act, 1999 (Act No. 29 of 1999) [PFMA]	“Section 76 of the Act secures transparency, accountability and sound management of the revenue, expenditure, assets and liabilities of government departments. The Act promotes the objective of good financial management in order to maximise service delivery. The Act allows DWS to enter into PPP agreements with the private sector for the commercial use of state assets”.
Safety at Sport and Recreational Events Act, 2010 (Act No. 2 of 2010)	“Events management is addressed by Safety at Sport and Recreational Events Act (Act No. 2 of 2010). This act deals with ensuring responsibility for safety and security at events. The act deals with <i>inter alia</i> responsibility for safety and security at the events, risk categorization of events and safety certificates.
South African Maritime Safety Authority Act, 1998 (Act No. 5 of 1998) [SAMSA]	One of SAMSA’s three legislative mandates is “to ensure safety of life and property at sea”. The Act enables SAMSA to administer and execute the relevant maritime legislation.”
Water Services Act, 1997 (Act No. 108 of 1997)	“The Act outlines the roles and responsibilities for the supply of water and sanitation to citizens. It also recognises the rights of all humans to basic water supply and sanitation services”.
Municipal Policy, By-Laws, Reports & Guidelines	Significance to the RMP:
Chris Hani District Municipality IDP Review (2019 -2020)	“A municipal planning approach that involves the entire municipality and its citizens in finding the best solutions to achieve good long-term development and promote tourism”.
Inxuba Yethemba Local Municipality IDP/Budget/PMS/ Process Plan (2020-2021)	“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.”
Enoch Mgijima Local Municipality IDP (2017-2020)	

CHAPTER 2: ENVIRONMENTAL ANALYSIS

2.1 BIOPHYSICAL ENVIRONMENT

2.1.1 Climate

According to Climate data.org (2018), the Tarkastad town where the Dam is located the climate is cool and temperate.

The town has little rainfall throughout the year. In a year the average rainfall is 455 mm and the average temperature is 14.5°C. However, at the time of this RMP compilation the area was experiencing

2.1.2 Topography

The topography of the area has a landscape that is characterized by low undulating hills varying in elevation from 1010 m to 1388 m known as the summit of Rooiberg (Commando Drift Nature Reserve PAMP, 2018-2028). **Figure 2** shows topographical characteristics of area around the Dam.



Figure 2: Topography around Kommandodrift Dam

2.1.3 Geology and Soil

According to Commando Drift Nature Reserve PAMP (2018-2028), the nature reserve and the

Dam lies on 500 m thick, fossiliferous beds of the Kartberg Sandstone Formation. The beds have high mudstone constituent which forms alluvium resulting in easily –eroded duplex soils.

2.1.4 Hydrology

Water Surface

The Dam lies within the Q14D quaternary drainage which forms part of the Mzimvubu-Tsitsikamma WMA. The Dam impounds the Tarka River **Figure 3** shows the water level fluctuations over a year period.

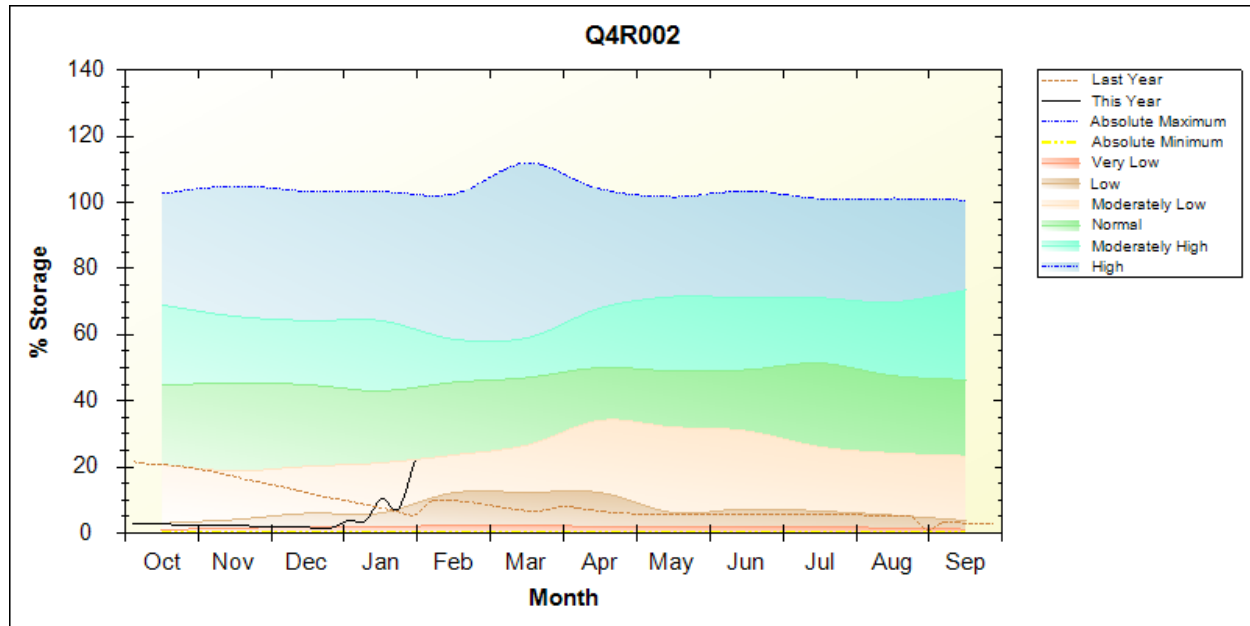


Figure 3: Fluctuations of Kommandodrift Dam water level over a year.
Source: DWS, 2020

As per **Figure 3**, the average storage level recorded for the year 2019 was approximately 6.6% which is considered very low. However for the year 2020 at the time of this RMP compilation the storage level was recorded at 22 % which is considered low (DWS, 2020).

The current recorded storage level, indicate a negative impact on 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).

According to the water quality results dated (2010 – 2016) from DWS, the water quality results for parameters such as turbidity, pH, e-coli etc. could not be made available at the time of conducting the study.

2.1.4 Flora

According to the Commando Drift Nature Reserve PAMP (2018-2028), the Dam falls within a transitional zone between the Eastern Mixed Nama Karoo and the *Cymbopogon-Themeda* dominated Highveld Grassland. The vegetation of the *Commandodrift Natrure* Reserve can be broadly categorised into: i) Riverine bush dominated by dense thickets of *Acacia karroo*; ii) dry and arid flats covered by *Aristida congesta* and Karoo Bush; and iii) mountainous areas typified by *Heteropogon contortus*, *Themeda triandra* and *Rhigozum obovatum*.

Around the Dam there are small isolated patches of prickly pear on the Rooiberg, as well as jointed cactus, wild tobacco, tamarisk, and evening primrose, in disturbed areas near the Dam.

Alien invasive plant species such as prickly pear can cause mild diarrhea, nausea and headaches if they are consumed by humans. While alien invasive plants species such as jointed cactus have a tendency of injuring livestock and game and causing devaluation of land. The jointed cactus has been declared a category 1b species, which necessitates its control, or removal and destruction if possible (Commando Drift Nature Reserve PAMP 2018-2028)

Table 4: List of alien invasive plant species found in Commando Drift Nature Reserve and Rooiberg area.

Scientific name	Common name
<i>Oputia</i>	Prickly pear
<i>Oputia aurantiaca</i>	Jointed cactus
<i>Nicotiana rustica</i>	Wild tobacco
<i>Tamarix</i>	Tamarisk
<i>Oenothera biennis</i>	Evening Primrose

2.1.5 Fauna

Mammals

According to the Commando Drift Nature Reserve PAMP (2018-2028) the majority of game found in the Command Drift Nature Reserve has been re-introduced, and includes Cape Mountain Zebra, Black Wildebeest, Red

Hartebeest, Blesbok, Kudu, Springbok, Mountain Reedbuck and Steenbok.

Fish Species

According to (Rouhani, 1998,) and (Commando Drift Nature Reserve PAMP 2018-2028), Kommandodrift Dam consist of mostly of alien fish species. Such as largemouth yellowfish, carp, eel and barbell.

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;
- Management and operation; and
- Safety.

2.2.1 Roads and Land-Based Transportation

Internal Road and Circulation: There is a secondary unpaved road that leads to the Commando Drift Nature Reserve (CDNR) and the Dam. While there are internal gravel/unpaved roads that leads to Dam wall, picnic area and overnight accommodations.

Parking: There are parking areas at the CDNR offices and also at the chalets within the nature reserve. However, there is sufficient undeveloped space which can provide area to accommodate the proposed recreational activities.

2.2.2 On-site Facilities

The existing facilities at the Dam includes:

- CDNR offices;
- Overnight accommodation;
- Day visitors play ground;
- Ablution facility; and
- Picnic area.

2.2.3 Management and Operation

The management and operation of the Dam is done by the DWS for primary purposes. Currently there is no institutional structure

managing the Dam for recreational use. Through the process of developing the RMP, ECPTA is proposed as an IA for the management of 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).

2.2.4 Safety

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

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 area falls within IYLM under Ward 06 and EMLM under ward 34, refer to **Figure 4** and **5** for the municipal demarcation boundaries.

A social audit was conducted for Ward 6 of IYLM and Ward 34 of EMLM with the data from Stats SA Community Survey (2016) that focus on the socio-economic conditions of the area.

The socio-economic conditions within these Wards are summarised in the following sub-sections:

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

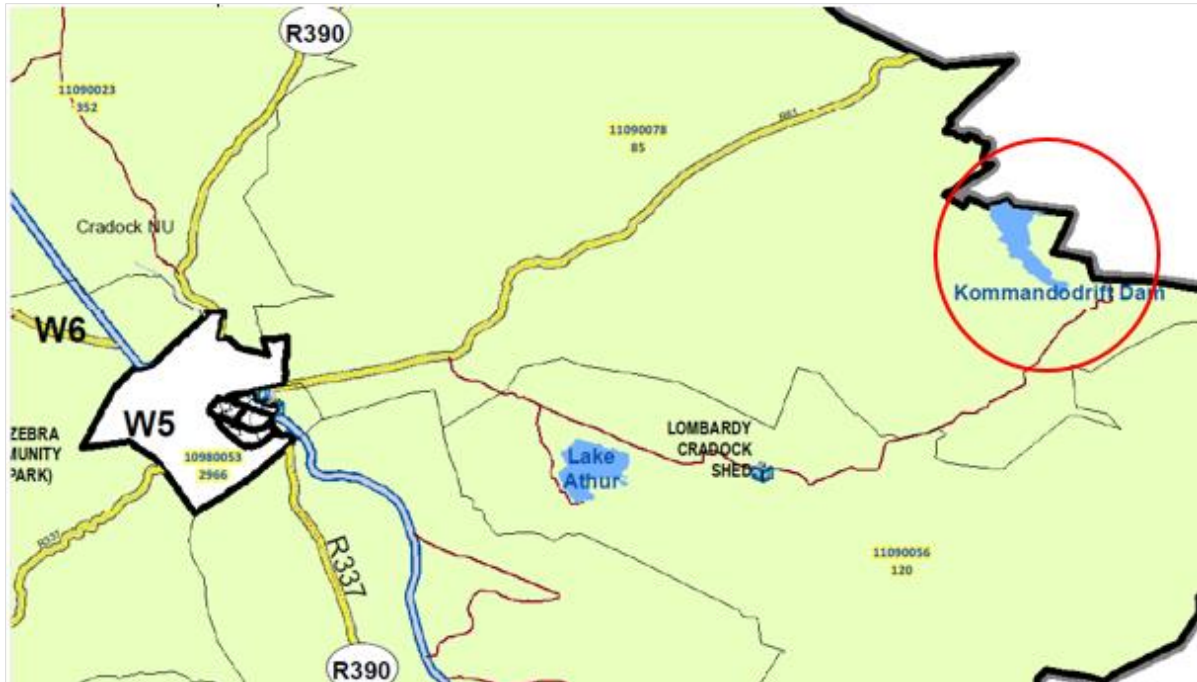


Figure 4: Inxuba Yethemba Local Municipality Ward 06
Source: Municipal Demarcation Board (2016)



Figure 5: Enoch Mgijima Local Municipality Ward 34
Source: Ward Demarcation Boundary (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, higher educational and no schooling categories. Ward 6 has 872 people representing only 21% of residents in IYLM who have no schooling level education. While 385 people in ward 6 have furthered their studies up to higher education level representing 11% of population in IYLM, **Figure 6**.

Table 5: Educational Level of Ward 6 versus IYLM

Description	Ward 6 (2016)	IYLM (2016)
Primary Level	776	2 995
Secondary Level	2 026	12 826
Certificate with Grade 12	799	7 943
Higher Educational Level	385	3 286
No Schooling	872	4 228

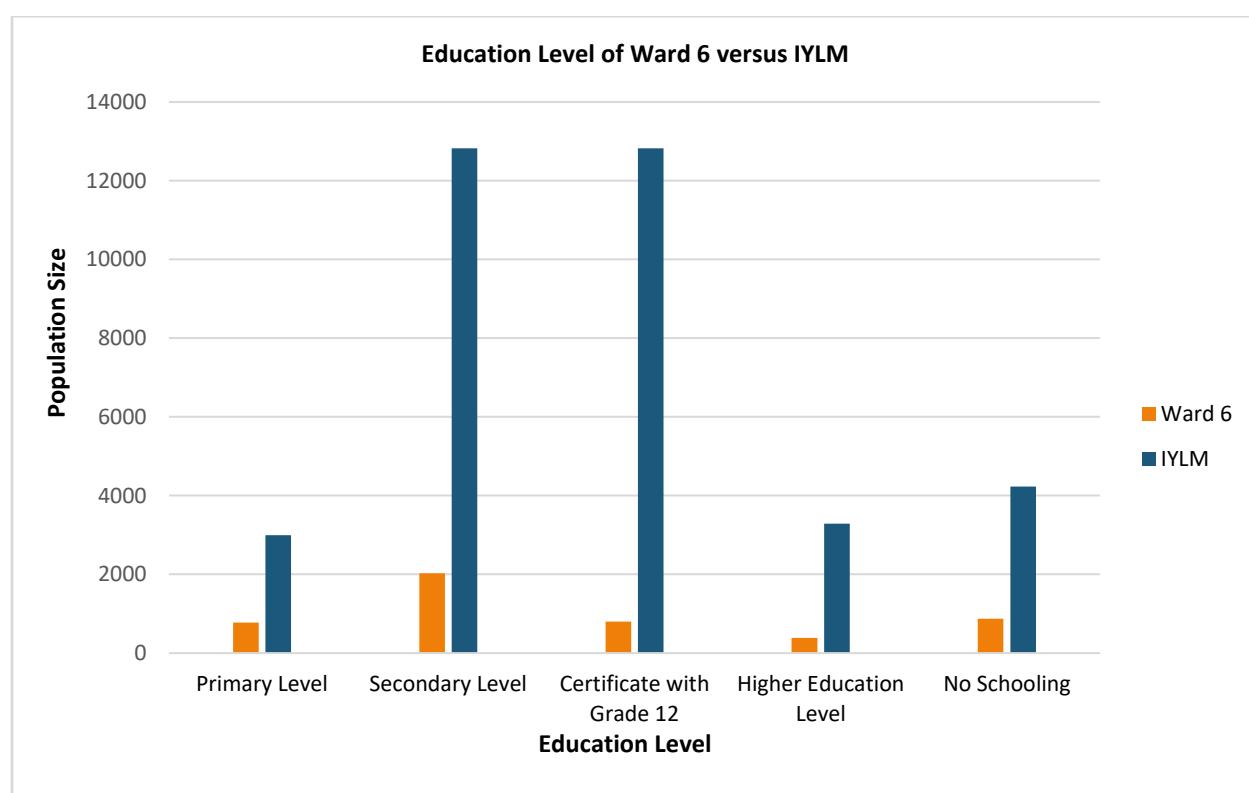


Figure 6: Educational Level of Ward 6 versus IYML

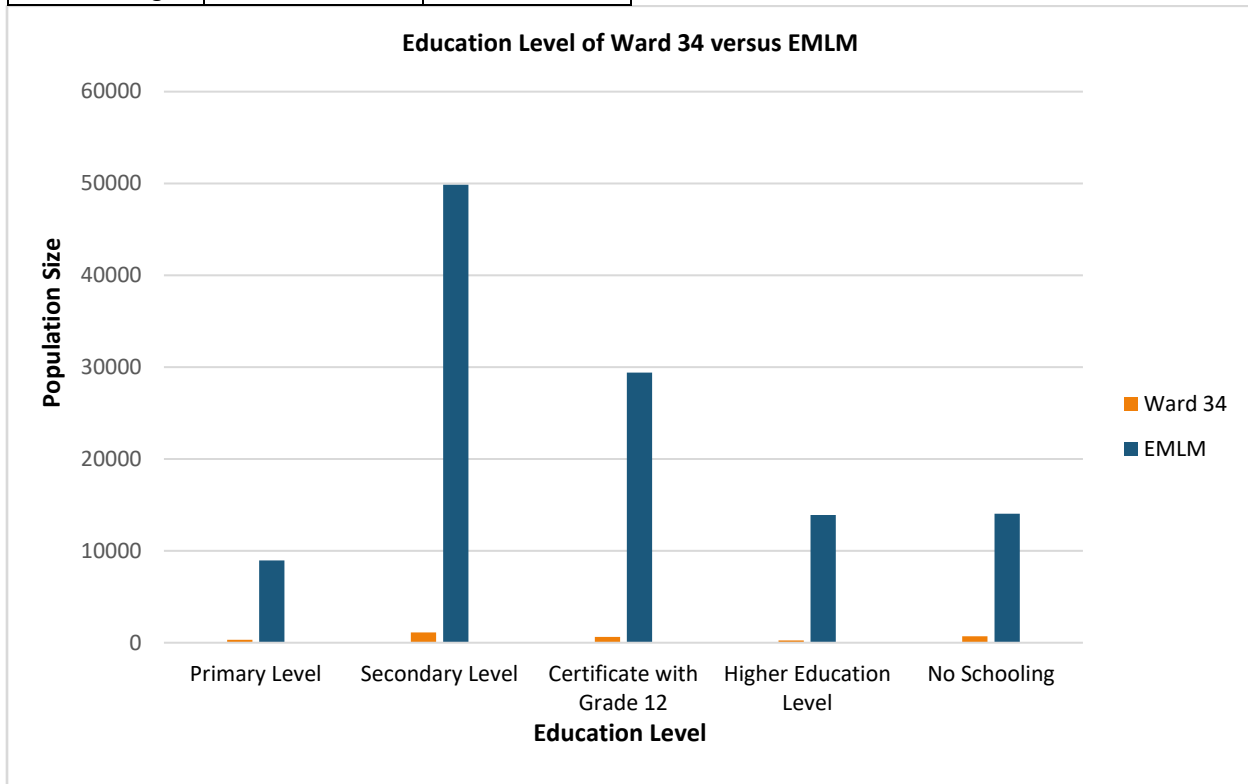
Source: Stats SA Community Survey (2016)

Figure 7 shows that ward 34 has 710 people representing only 5% of residents in EMLM who have no schooling level education. While 238 people in ward 34 have furthered their studies up to higher education level representing 2% of

population in EMLM. The implication in the project is that the majority of residents in the aforementioned wards will not have received any kind of training to become active participants in the tourism sector.

Table 6: Educational Level of Ward 34 versus EMLM

Description	Ward 34 (2016)	EMLM (2016)
Primary Level	329	8 969
Secondary Level	1 123	49 870
Certificate with Grade 12	634	29 400
Higher Educational Level	238	13 919
No Schooling	710	14 029

**Figure 7:** Educational Level of Ward 34 versus EMLM

Source: Stats SA Community Survey (2016)

Monthly Income

Figures 8 and 9 show that 852 individuals within ward 6 representing only 14% of the IYLM population receive no income. Ward 34 has 733 people representing only 2% of the population in

EMLM who do not have any sources of income (Stats SA Community Survey, 2016). This then requires concerted and integrated efforts by the municipalities to create decent work and sustainable livelihoods for the people.

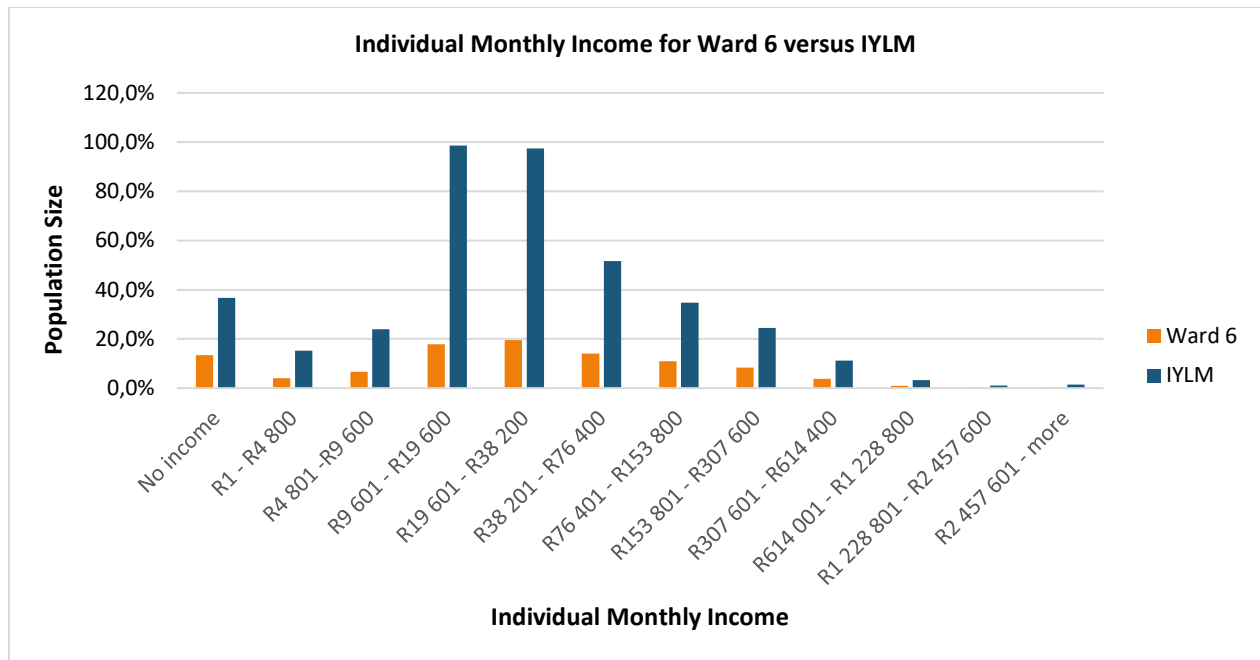


Figure 8: Individual Monthly Income for Ward 06 versus IYLM
Source: Stats SA Community Survey (2016)

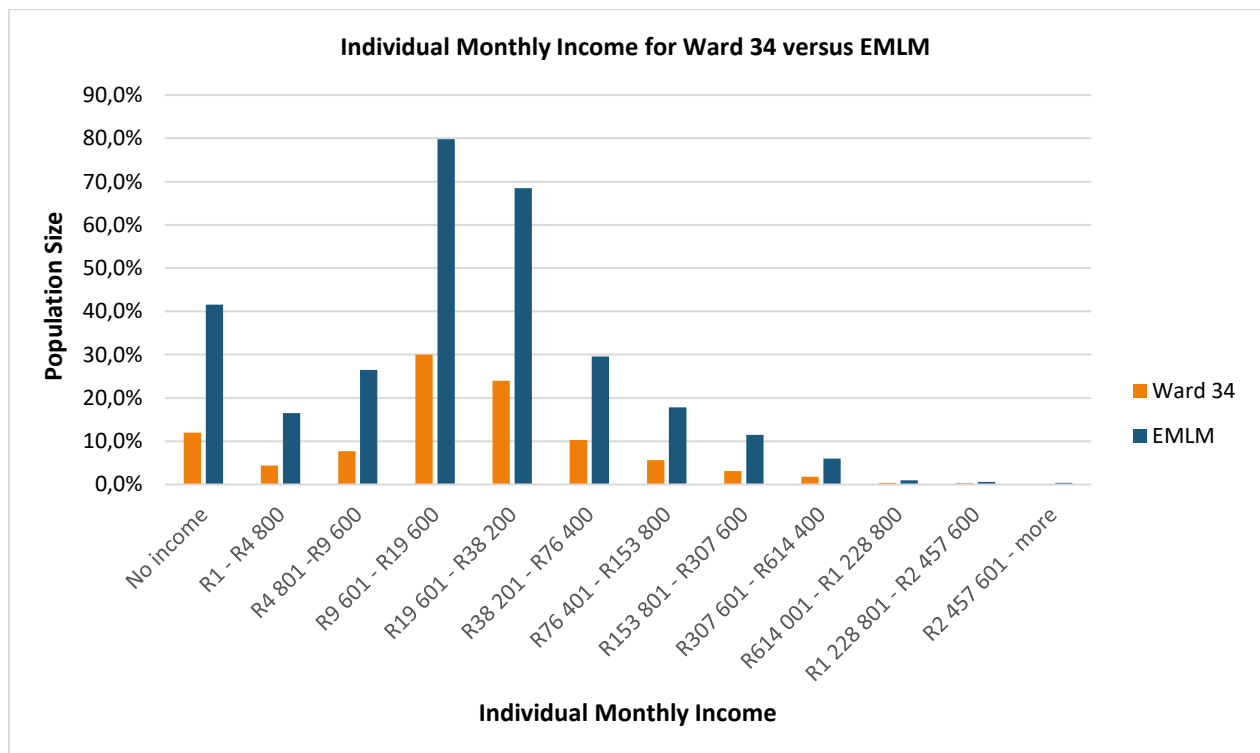


Figure 9: Individual Monthly Income for Ward 34 versus EMLM
Source: Stats SA Community Survey (2016)

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 purposes.

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

In terms of recreational angling, this 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 fishing and small scale fishing is widely practiced by rural community members to sustain their livelihoods. Subsistence and small-scale fishing has the potential to promote the following positive spin-offs:

- 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 development 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 based on the principles underlying the integrated resource planning procedure for recreational waters.

Process triggers are 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 process triggers and potential challenges presented 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 unlock of socio-economic potential of the water resource.

Table 7: Summary of triggers and potential challenges for Kommandodrift Dam

Trigger (s)	Potential Challenge(s)
Resource Management	<p>Access</p> <ul style="list-style-type: none"> The access road to the Dam or nature reserve is in a bad condition this might impact on the lack of interest to use the road as motorist will travel on gravel road for approximately 22 km; There are two access point to the Dam, one is situated directly at the nature reserve entrance and the other is alleged at a private residence. Servitudes and lease agreements need to be reviewed; and Some community members are not aware that the Dam is of public use due the fact that it is within a nature reserve and the Dam is surrounded by private residence. <p>Protected Area</p> <ul style="list-style-type: none"> The Dam is part of the Commando Drift Nature Reserve. The activities that are proposed should not be in conflict with the protected area's objectives. <p>Alien Invasive Species</p> <ul style="list-style-type: none"> The area surrounding the Dam is partially infested by alien invasive plant species. <p>Water pollution</p> <ul style="list-style-type: none"> The Dam is currently silted; and

Trigger (s)	Potential Challenge(s)
	<ul style="list-style-type: none"> There are agricultural fields close to the Dam which might affect the water quality of the Dam, due to fertilizers flowing into the Dam during heavy rainfall.
Resource Utilisation	<p><u>Public Safety</u></p> <ul style="list-style-type: none"> Canoeing used to be one of the permissible activities at the Nature Reserve, however, due to unforeseen incidences that occurred in the past it was phased out.
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 utilising the Dam for recreational purpose. 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.

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 10**.

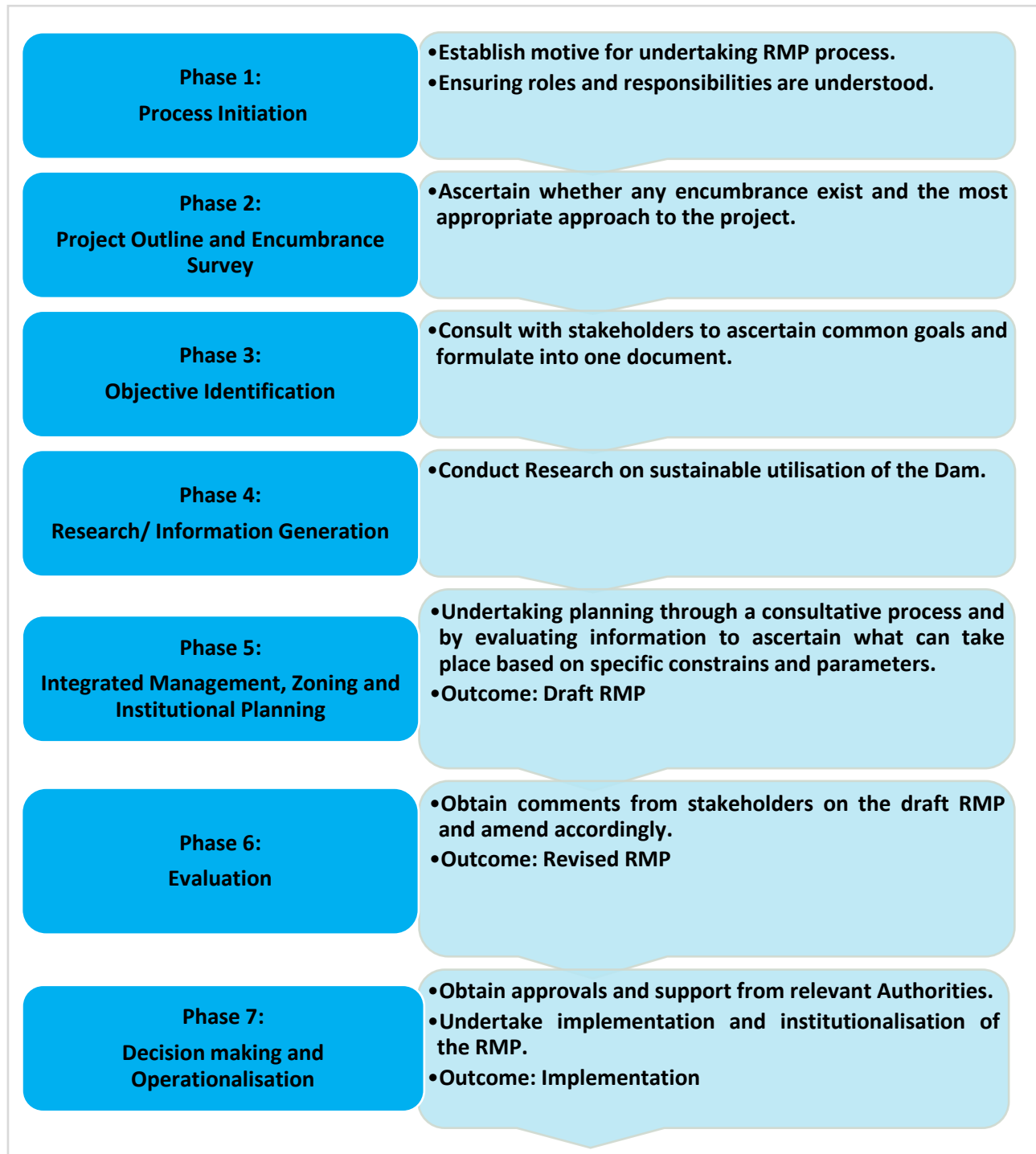


Figure 10: RMP Procedure

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, Southern Operations Champion and Dam Control Officer) on **18 September 2019**.

During the site inspection the following were observed: the Dam is only fenced at the DWS access point and the Dam wall; vandalised existing infrastructures such as ablution blocks, picnic and braai area; lack of access control which leads to issues of vandalism on the existing recreational facilities as well as the infrastructure of the Dam. Additional background information was collated from consultation with different stakeholders. Potential Interested and Affected Parties (I&APs) were identified during the site inspection through liaison with the Dam Control Officer.

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:** Newspaper advert for the initial public meeting was advertised on a **Daily Dispatch Newspaper**. The advert invited the public to attend the Public Participation Meeting. The advert was published in English on **12 November 2019**. The draft RMP presentation advert was published on **Daily Dispatch** on **17 February 2020** (refer to **Appendix C**).
- **Loud Hailing:** Loud hailing was also used as a form of notification, it aimed at informing the I&APs about the public consultative meetings. The call out detailed a brief description of the RMP, meeting date, time, venue and relevant contact details. Loud hailing was done in isiXhosa on **18 November 2019**.
- **Flyers and Onsite Notices:** Flyers and onsite notices for draft RMP presentation were compiled in English and Xhosa, the flyers and the draft RMPs were distributed on **10 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 **12 November 2019**, notifying them about the scheduled consultative meetings. The meeting invites for the draft RMP presentation were sent on **14 February 2020**. (refer to **Appendix E**).
- **Background Information Document (BID):** The BID was sent to stakeholders *via* email with background information about the proposed RMP project (refer to **Appendix B**).
- **Authority Meeting:** The initial authority meeting was held on **19 November 2019** at the **Enoch Mgijima Local Municipality: (Town Hall)**. The draft RMP was presented on **25 February 2020** at **Enoch Mgijima Local Municipality: (Town Hall)**. The purpose of the meeting was:
 - To present the RMP project, its goal and the objectives of the project to the authorities; and
 - To allow the authorities an opportunity to participate in the project by sharing information on their respective mandates.
- **Public Meeting:** The initial public meetings were held on **20 November 2019** at **Chris Hani Hall (Hofmeyr)** and **Zola Community Hall (Tarkastad Town)**. The draft RMP was presented on **25 February 2020** at **Zola Community Hall (Tarkastad Town)**.
- **Comment and Responses Register:** Copies of the draft RMP were circulated on **10 February 2020** for public review. The commenting period lapsed on **10 March 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. These 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 8**. 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.

KOMMANDODRIFT DAM RESOURCE MANAGEMENT PLAN

Table 8: Planning Partners and their Respective Mandates

Department	Functions / objectives
Chris Hani District Municipality	<p>The Dam is within the jurisdiction of the IYLM and EMLM.</p> <p>The Local Economic Development (LED) unit within Chris Hani District Municipality primary focus is to improve <i>inter alia</i> the tourism sector. The main purpose for LED is to support economic development initiatives that will empower the community, create job opportunities, minimise income leakages and growth by building partnerships within relevant stakeholders in order to create a conducive environment for job creation.</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 DAFF'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.
Cooperative Inland Watercourse Safety Programme (CIWSP)	The CIWSP is the programme under DWS and is supporting a multi-departmental working group that is developing an innovative approach to inland water and safety integrity. The project, was initiated out of the need to find an innovative,

KOMMANDODRIFT DAM RESOURCE MANAGEMENT PLAN

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

3.5 RMP DATA ANALYSIS

3.5.1 Encumbrance Survey (Phase 2)

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

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

The identified encumbrances are categorized into Biophysical and Socio-cultural. **Table 9** summarises the identified biophysical and socio-cultural encumbrances/ limitations, respectively that might affect the development or implementation of the RMP for the Dam.

Table 9: Summary of Biophysical and Socio-cultural Encumbrances

Item	Description
Climate	<ul style="list-style-type: none"> The 2019, hydrological data from DWS indicates that due to climate change the Dam level is currently (as of 04 November 2019) at approximately 2.37 % full. The Tarkastad area has experienced little to no rain for the year of 2019. If the insufficient rains persist it will be impossible to implement the RMP for the Dam.
Flora	<ul style="list-style-type: none"> Alien invasive plant species such as prickly pear can cause mild diarrhea, nausea and headaches if they are consumed by humans. While alien invasive plants species such as jointed cactus have a tendency of injuring livestock and game and causing devaluation of land. Devaluation of land can contribute to sediment transportation into the Dam which will result to siltation. The jointed cactus has been declared a category 1b species, which necessitates its control, or removal and destruction if possible.
Hydrology	<ul style="list-style-type: none"> According to (DWS, 2019), the Dam very level is low and this may prevent the implementation of potential recreational activities on the water surface by the time the RMP is approved for implementation. The demand to use water for recreational activities will depend on the Dam being on its full supply level.
Socio-cultural	<ul style="list-style-type: none"> Only 385 people in ward 6 representing 11% of the population in the IYLM have furthered their studies up to higher education level whereas in ward 34 only 238 people representing 2% of the population in EMLM have received higher education. The implication in the project is that the majority of residents in the aforementioned wards will not have received any kind of training to become active participants in the tourism sector. Ward 6 has 852 people representing only 14% of the IYLM population having no sources of income. While ward 34 has 733 people representing only 2% of the EMLM population having no sources of income. Moreover this will result to lack of community participation in the tourism developments at the Dam. The majority of residents receive no 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 10** for the SWOT analysis.

Table 10: SWOT Analysis for Kommandodrift Dam

Strengths	Weaknesses
<ul style="list-style-type: none"> • A water resource is already available. There is no need to build a new dam to introduce the RMP. • The dam is within Commando Drift Nature Reserve. • Reasonable entrance fees. • The dam is situated in a Karoo region which by its self-it's a tourist attraction. • The dam is surrounded by towns such as Tarkastad and Cradock which will attract tourist. • There are already existing infrastructures e.g lodges at the nature reserve and the presence of game. 	<ul style="list-style-type: none"> • Limited supply of potable water to the communities. • The dam is not well marketed for recreational use and tourism. • High unemployment rate around Tarkastad town. • Access road to the dam is in a bad condition. • There is no integrated management system between Eastern Cape Parks Tourism Agency (ECPTA) and municipalities both on local level and district level. • Currently on the IDP of Enoch Mgijima Local Municipality, Kommandodrift Dam is not part of the planning initiatives in the 2017-2020 budget. • Alien invasive plants present at the dam.
Opportunities	Threats
<ul style="list-style-type: none"> • Opportunity to build more chalets at the dam. • The dam has diversity of fish species therefore aquaculture can be introduced. • Introduction of water sports at the dam. • The dam is not well marketed for recreational use and tourism therefore there is an opportunity to market the Dam. • Potential tourism growth. • Introduction of environmental awareness where school pupils can be educated about fish species. • Introduction of day Spa's. • Karoo area produces good game and livestock meat. • The dam can be used as a wedding venue. • Removal of alien invasive species can create economic opportunities for local communities. • Angling and shoreline fishing can be introduced. • Shops can be opened at a nearby town e.g Tarkastad to sell food and artefacts for tourists. • Overnight accommodation can be built at Tarkastad town. 	<ul style="list-style-type: none"> • Access road is in a bad condition. • The dam is allegedly silted. • Overgrazing from upstream causes soil erosion which plays a role in the build-up of silt in the dam. • The dam is located in a drought stricken area. • No local community members are employed at the dam. • Second access point is allegedly situated directly at a private residence. • Most community members are not aware that the dam is of public use.

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 have the dam and surrounding environment free of alien invasive species.

KPA 2: Resource Utilisation

- To provide equitable and compatible access control at the Dam;

- To establish potential developments on the Dam's surrounding environment like addition of more chalets, day spa's, B&Bs at nearby towns, tuck shop and shops to sell artefacts;
- To introduce aquaculture and fisheries at the Dam;
- To provide the local communities with an opportunity for subsistence fishing;
- To conduct public awareness to educate local community members about the importance of having a water resource; and
- School tours to be introduced at the Dam to educate school children about the importance of the environment and biodiversity.

KPA 3: Benefit Flow Management

- To improve the Dam's tourism marketing strategy and establishing websites to advertise the Dam as it is not well known amongst local community members;
- To uplift the local economy and increase benefit flows to the surrounding communities through community development programmes; and
- To unlock the socio-economic potential of the dam by creating job opportunities.

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 have a world class tourist destination with proper infrastructures that are well managed and ensuring equitable access for all through community participation and beneficiation".

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

According to the CHDM (IDP Review, 2019 – 2020), The CHDM has a rich history and natural resources that can promote tourism development in the region. These resources are untapped and not adequately budgeted for within the District and local municipalities.

The region's emergence as a malaria free game farming and nature reserve location has contributed to tourism revenue. The District offers a variety of tourism experiences ranging from wildlife, game parks, nature reserves, fish river canoe, hiking trails, abseiling, as well as historical building such as battle sites, rock arts and Anglo Boer War memorials.

The district lacks business support services as business people have to either travel to Komani or outside the municipal area to access business support services. Enoch Mgijima Local Municipality has the most developed business environment as the area is the main urban centre of the district and its primary economic node.

Moreover the lack of social opportunities for many rural youth is a deep threat to personal development and community well-being with increasing youth unemployment, drug and alcohol abuse. Although the percentage of people living in poverty has decreased from 76% in 2005 to 55% in 2005, this still remains very high.

One of CHDM objectives is to capitalise on tourism potential and put in place additional tourism promotion funding and actively promote CHDM as an attractive place to live, work and locate business.

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 11** shows the plans and their components.

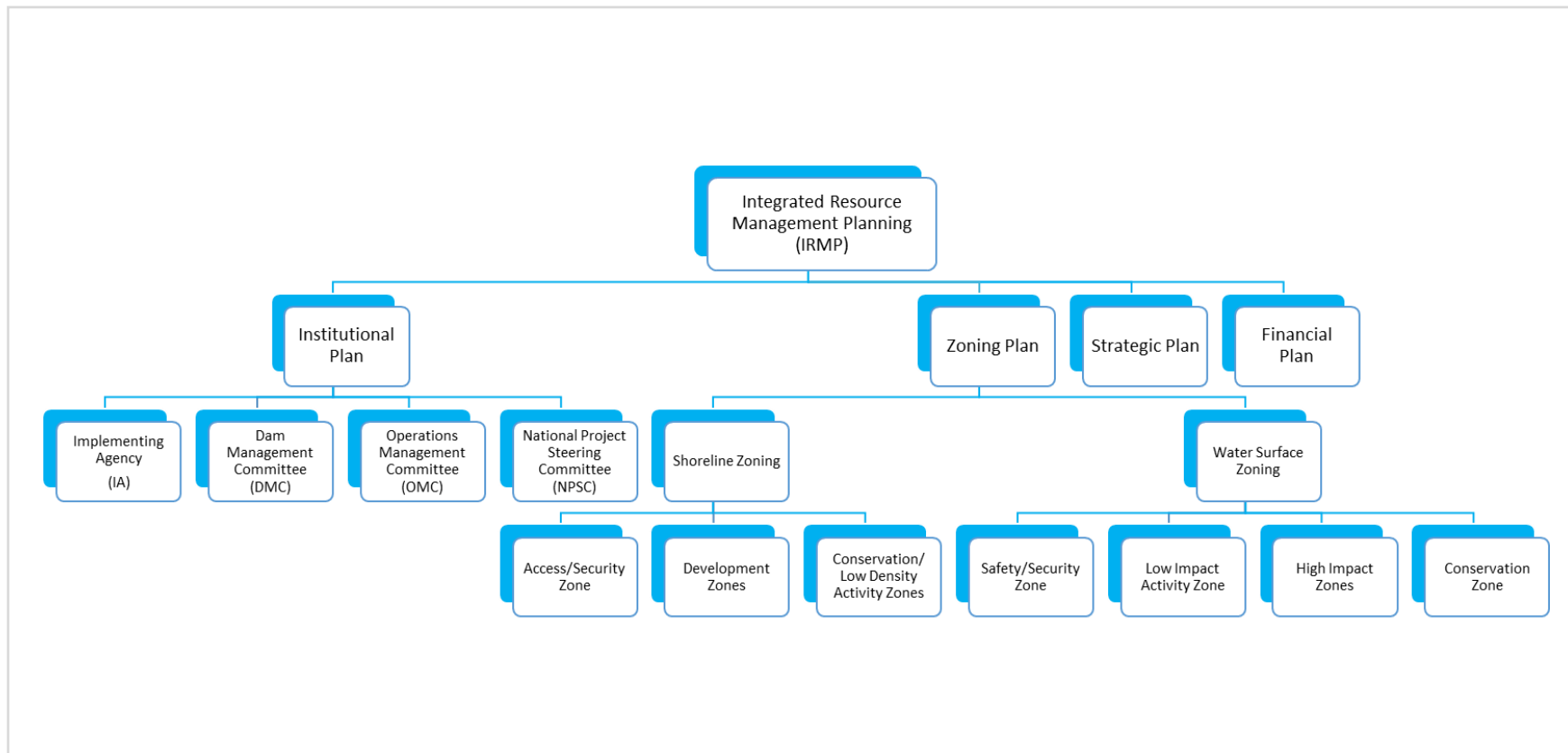


Figure 11: Integrated Resource Management Planning

4.1 INSTITUTIONAL PLAN

The Institutional Plan provides a framework for the institutional arrangement at the Dam. The proposed management system 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 implements 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 must facilitate the implementation of programs or action projects identified in the RMP for Kommandodrift Dam. The IA and DWS will sign a Memorandum of Agreement (MOA), which is a legally binding document that outlines the roles, 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 The DMC comprises of user groups representatives that are interested or affected by 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 and reviewing resolution for general management issues;
- Monitoring the practical implementation of the RMP and BP;
- 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 implementation of the incident management system and wash bays.

Figure 12 shows the proposed parties to form part of the DMC for Kommandodrift Dam.

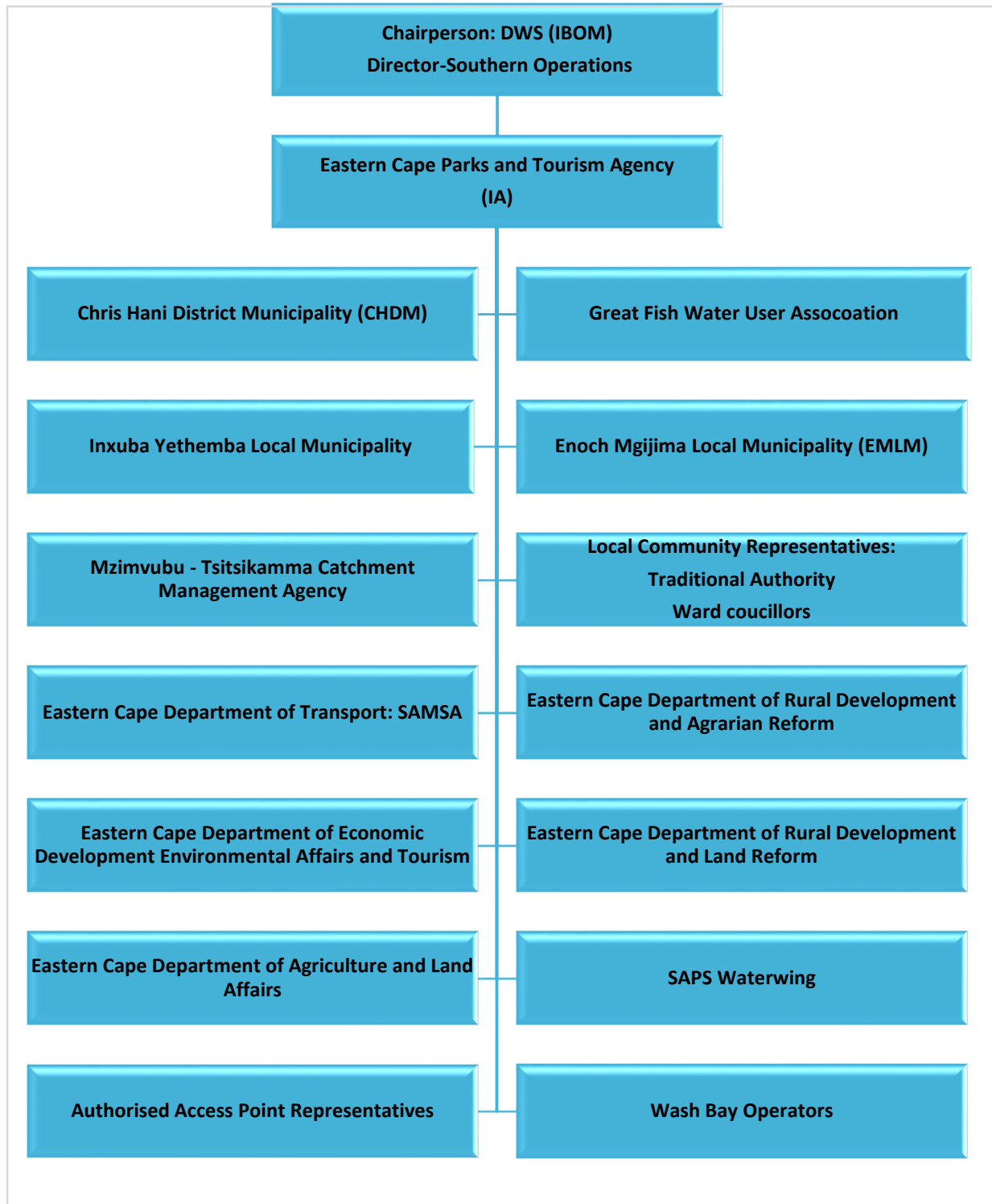


Figure 12: Proposed DMC

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 an IA;
- Roles and responsibilities of members;
- Minutes and attendance requirements;
- Reporting requirements;
- Management of agreements;
- Management of access objectives;
- Management of development targets;
- Management of water quality monitoring;
- Management of and 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)²:

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 formal agreement with the DWS is concluded. 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.

² 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 must 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 13**.

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**).

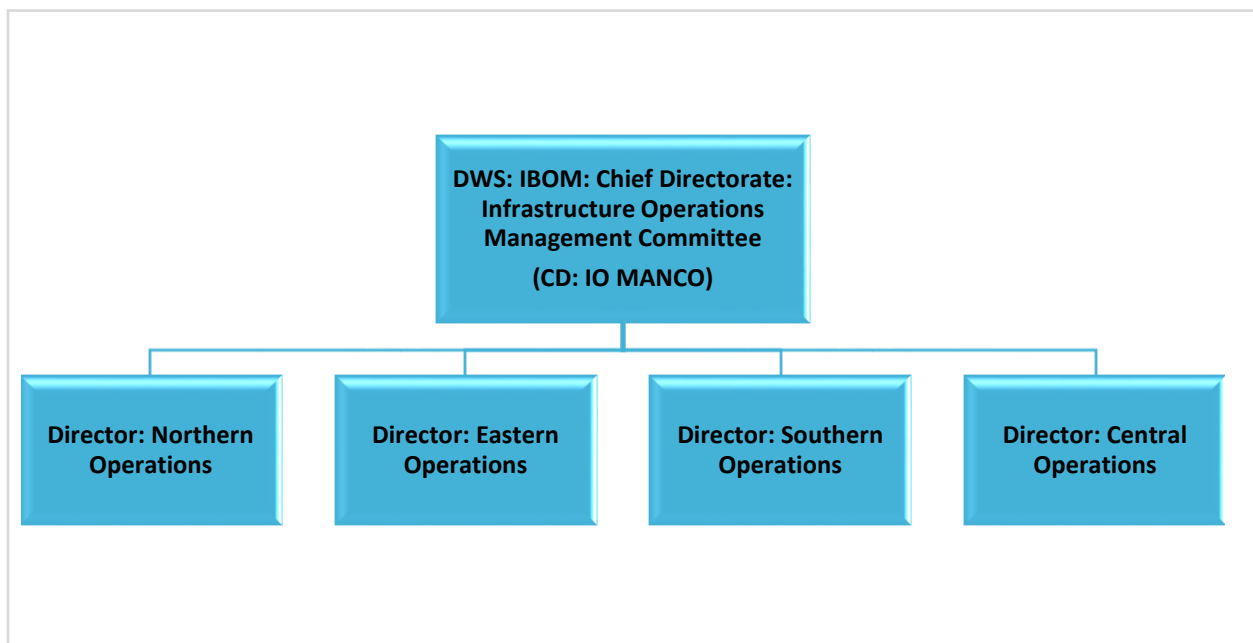


Figure 13: Existing CD: IO MANCO

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



Figure 14: 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 exiting 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(s) 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, aquaculture³ and small-scale fishing.

High Impact Activity Zone:

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

Table 9 and **Figure 15** shows the proposed water surface zoning for Kommandodrift Dam.

³ The final location of the aquaculture will be dependent on the outcome of a feasibility study.

KOMMANDODRIFT DAM RESOURCE MANAGEMENT PLAN

Table 11: 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 Rowing Canoeing Paddling boat Float tubes Swimming Slipway Floating Jetty Aquaculture facilities 	<ul style="list-style-type: none"> Motorised boating Water skiing House boats Para-sailing Jet Skis Water skiing 	<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 IA and DWS. Launching and mooring of vessels should take place at this zone. Motorised boating are allowed to launch at this zone but no water wake should be formed until the designated area for motorised recreational boating is reached.
<ul style="list-style-type: none"> High Impact Activity Zone. 	<ul style="list-style-type: none"> Activities associated with water wakes such as: <ul style="list-style-type: none"> Motorised boating Water skiing Jet skis Aquaculture facilities 	<ul style="list-style-type: none"> Angling Rowing Canoeing Paddling boat Float tubes 	<ul style="list-style-type: none"> Area should be demarcated by demarcation makers and AtoN. All activities within the high impact zone shall take place beyond 70m from the shoreline. Activities within this zone must be evaluated to determine their impact on the water resources and other Dam users before they are allowed into the Dam.

KOMMANDODRIFT DAM RESOURCE MANAGEMENT PLAN

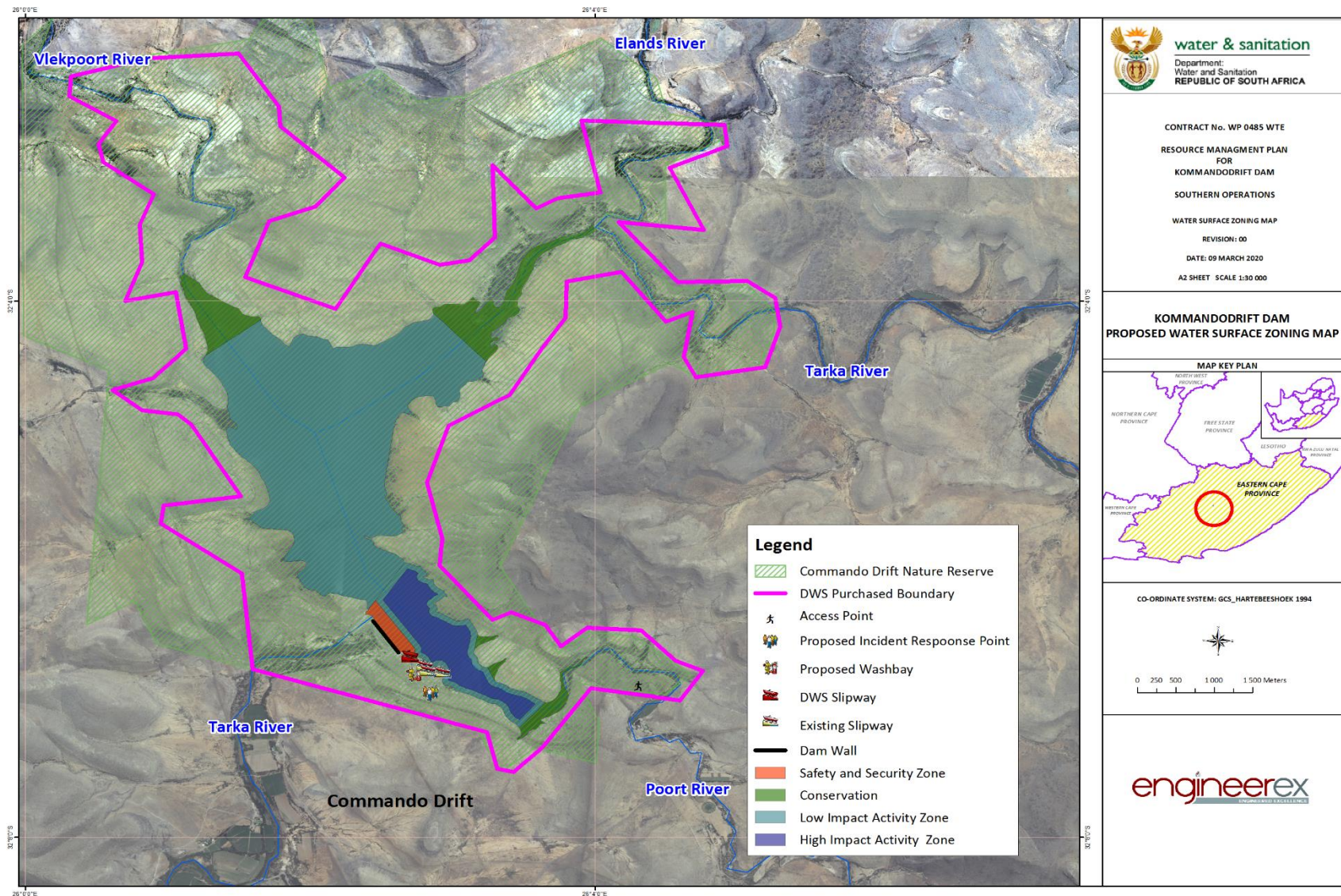


Figure 15: Proposed Water Surface Zoning

4.2.2 Shoreline Zoning⁴

In addition to the water surface zoning, an integral part of the RMP is also shoreline zoning. This zoning 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 not be less than 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. This zone will not be applicable for Kommandodrift Dam as it is within a nature reserve.

Table 12 and **Figure 16** and **17** shows the proposed shoreline and overall zoning for Kommandodrift Dam.

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

KOMMANDODRIFT DAM RESOURCE MANAGEMENT PLAN

Table 12: 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 relevant Authorities and they are conducted as per the relevant Legislations. These zone 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 Shoreline fishing 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 	<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.

KOMMANDODRIFT DAM RESOURCE MANAGEMENT PLAN

Zone Description	Permissible Activities	Non-permissible Activities	Recommendation
<ul style="list-style-type: none"> High Density Activity Zone. 	<ul style="list-style-type: none"> Recreational clubs Chalets Ablution facilities Infrastructure for services 	<ul style="list-style-type: none"> Permanent Structures 	<ul style="list-style-type: none"> The management of this area should follow PPP process in terms of the National Treasury. Requirements of the NWA and NEMA must be taken into account in all recreational activities. Noise level to be kept at a minimum. All developments must be approved by the DWS. No private slipways to be built without approval from the DWS

KOMMANDODRIFT DAM RESOURCE MANAGEMENT PLAN

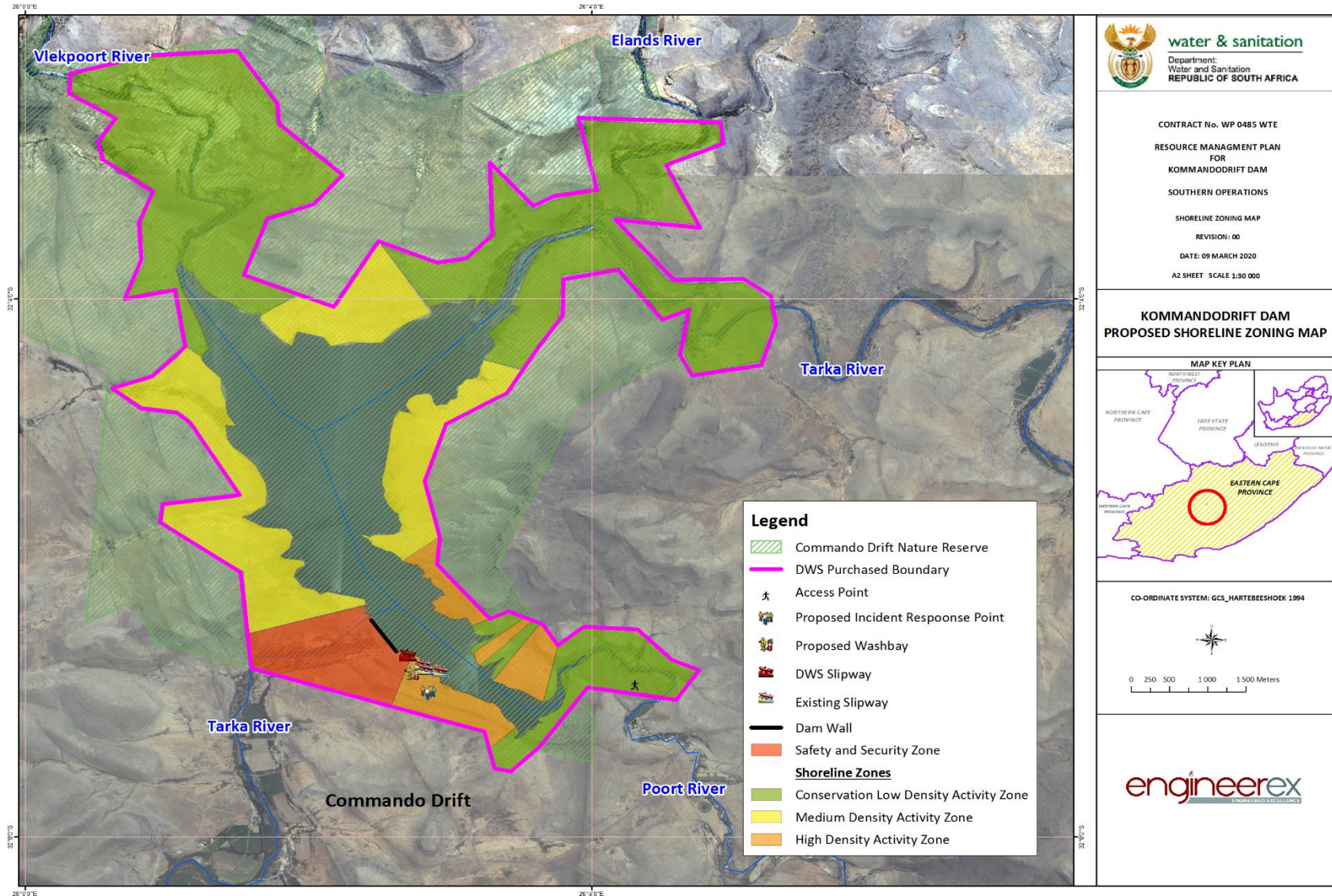


Figure 16: Proposed Shoreline Zoning Map

KOMMANDODRIFT DAM RESOURCE MANAGEMENT PLAN

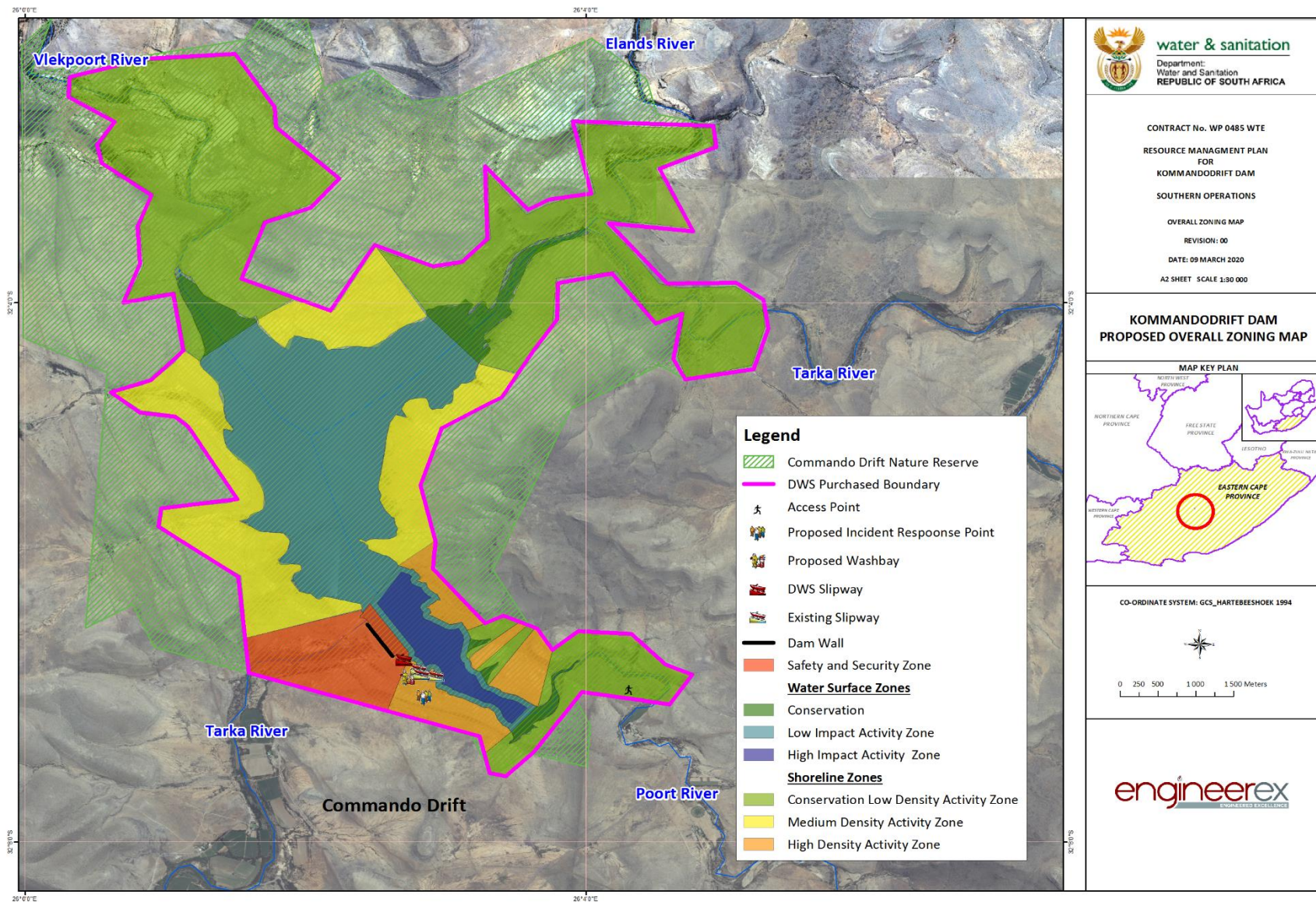


Figure 17: Proposed Overall Zoning Map

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

Table 13: Area required per user

Craft	U/A (ha/craft)
Canoeing	1.0
Fishing	3.0
Angling	2.0
Powerboats	4.0
Average	2.5

Based on the table above the average hectare per user is 2.5 ha (25 000 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 Kommandodrift Dam is **879. 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: $PCC = A \div U/a \times Rf$
 $= 879 \times 1/5 \times 1$
 $= 176 \text{ crafts on the Dam}$

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

Kommandodrift Dam, these factors includes sensitive areas, such as conservation areas (53 ha) as well as aspects regarding the safe operation and management of the Dam (6 ha).

These factors accounts for 59 ha, that is 7% of the area that is not available for recreational use.

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

$$= 176 \times (100 - 7) \%$$

$$= 83 \text{ crafts}$$

Effective Carrying Capacity (ECC)

$ECC = [\text{Infrastructure Capacity} \times \text{Management Capacity}] \times 100 / RCC$

There is no recreational 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?);
- Management support (Who will be involved?); and
- Action Projects (How to achieve this?).

In **Tables 14 to 16**, the strategic plan on how to achieve the objectives identified for the Dam is outlined.

4.3.1 KPA 1: Resource Management

Table 14: 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)
<p><u>Removal of alien invasive plant species:</u></p> <ul style="list-style-type: none"> To have the dam and surrounding environment free of alien invasive species. 	<ul style="list-style-type: none"> There are records of alien invasive plant species at the Dam such as prickly pear, australian reeds and jointed cactus. Alien invasive plant species such as prickly pear can cause mild diarrhea, nausea and headaches if they are consumed by humans. While others such as jointed cactus have a tendency of injuring livestock and game and resulting in devaluation of land. The jointed cactus has been declared a category 1b species, which necessitates its control, or removal and destruction if possible. 	<ul style="list-style-type: none"> Eradicate all existing alien invasive plant species. Monitor the possible recurrence of invasive plant species. 	<ul style="list-style-type: none"> Department of Environmental Affairs (DEA) Working for Water (WFW) within the DEA

4.3.2 KPA 2: Resource Utilisation

Table 15: 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>Access control:</u> <ul style="list-style-type: none"> To provide equitable and adequate/compatible access at the Dam. 	<ul style="list-style-type: none"> The Dam is surrounded by private owners and it is not clear for the surrounding communities that the Dam can be used by the public. There are two access points one at the main access of the nature reserve and the second access point at a private residence. There is a need to have an access point which is close to the nearby community. 	<ul style="list-style-type: none"> To implement an institutional management structure to oversee access and recreational use of the dam. To appoint community members to work at the Dam, this will create job opportunities. 	<ul style="list-style-type: none"> DWS IA Eastern Cape Parks and Tourism Agency (ECPTA) with the support of the DMC
<u>Tourism development:</u> <ul style="list-style-type: none"> To establish potential developments on the dam's surrounding environment like addition of more chalets, day spas, B&Bs at nearby towns, tuck shop and shops to sell artefacts. 	<ul style="list-style-type: none"> The location of the dam is an ideal environment that provides excellent opportunity to develop the recreational facilities within the area. If more tourism facilities are put in place, they will open economic opportunities within the Dams location. 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"> Feasibility study should be undertaken to acquire whether this type of developments will be feasible in the area. 	<ul style="list-style-type: none"> IA (ECPTA) with the support of the DMC
<u>Aquaculture:</u> <ul style="list-style-type: none"> To introduce aquaculture at the dam. 	<ul style="list-style-type: none"> During public participation engagements the communities showed interest in aquaculture. 	<ul style="list-style-type: none"> To conduct a feasibility study to get comprehensive information on the viability of the project e.g the soil type for its stability in case where ponds are to be constructed, water quality parameters, size to be demarcated for aquaculture, targeted production etc. To develop a Business Plan (BP) for the aquaculture project. Appoint an aquaculture expert. Implement the aquaculture project. 	<ul style="list-style-type: none"> Department of Agriculture Rural Development and Land Reform (DARDLR) Department of Environment, Forestry and Fisheries (DEFF) IA ECPTA) with the support of the DMC
<u>Subsistence fishing:</u>	<ul style="list-style-type: none"> There is an interest of fishing at the Kommandodrift Dam to sustain livelihood. 	<ul style="list-style-type: none"> Demarcate an area on the zoning map suitable for fishing. 	<ul style="list-style-type: none"> DARDLR DEFF

KOMMANDODRIFT 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)
<ul style="list-style-type: none"> To promote subsistence fishing at the Dam. 		<ul style="list-style-type: none"> Permits (fishing licence) must be acquired and the use of gill nets must be prevented, as it has significant negative impact on fish population within the dam. Educate 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. 	<ul style="list-style-type: none"> DWS IA (ECPTA) with the support of the DMC
<p><u>Public and Environmental Awareness:</u></p> <ul style="list-style-type: none"> To conduct public awareness to educate local community members about the importance of having a water resource. School tours to be introduced at the dam to educate school children about the importance of the environment and biodiversity. 	<ul style="list-style-type: none"> The is a potential to educate school children about the heritage site within the nature reserve, biodiversity and importance of having the water resource. 	<ul style="list-style-type: none"> Identify specific communities of interest for the public awareness programmes. Identify and develop information material to be used for community out reach. Conduct awareness programmes to teach communities on sustainable methods for fishing such as using fishing lines or rods. Conduct the public participation on awareness. Establishment of institutional arrangement that involves community participation. Provide the fishermen with the fishing equipment. Incorporate the objective in a Business Plan to determine projected costs for the implementation of the action projects required to conduct public awareness. 	<ul style="list-style-type: none"> IA (ECPTA) with the support of the DMC Department of Arts and Culture (DAC)

4.3.3 KPA 3: Benefit Flow Management

Table 16: 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)
Marketing: <ul style="list-style-type: none"> To improve the Dam's tourism marketing strategy and establishing websites to advertise the Dam as it is not well known amongst local community members. 	<ul style="list-style-type: none"> The Dam is not well marketed in the area, particularly amongst local communities. 	<ul style="list-style-type: none"> Create a website with indicating recreational activities occurring at the Dam. Market the Dam for recreational purposes. 	<ul style="list-style-type: none"> IA (ECPTA) with the support of the DMC
Skills Development Programmes: <ul style="list-style-type: none"> Uplift the local economy and increase benefit flows to the surrounding communities through community empowerment. 	<ul style="list-style-type: none"> Tourism sector has been identified as a vehicle for skills development, job creation, Broad-based Black Economic Empowerment (BBBEE), etc. it is imperative that the local communities derive benefits from recreational activities conducted at the Dam. The level of unemployment in the area is high. 	<ul style="list-style-type: none"> Implement skills development programmes where opportunities exist. Implementation of environmental awareness to the local communities and ensure that they are always updated with environmental information. Educate the community on how to utilise the Dam for other recreational activities besides fishing. This will assist in terms of uplifting the surrounding local community. Extend awareness to the communities on project management skills. Prioritise the local community if any job opportunities arises. 	<ul style="list-style-type: none"> IA (ECPTA) with the support of the DMC Other relevant Government departments
Employment Creation: <ul style="list-style-type: none"> To unlock the socio-economic potential of the dam by creating job opportunities 	<ul style="list-style-type: none"> About 14% of residents under ward 06 of IYLM and 2% of residents under ward 34 of EMLM are not economically active suggesting they no longer seek to become employed. This speaks to the fact that there is a large proportion of persons within IYLM and EMLM who have limited income 	<ul style="list-style-type: none"> Strengthen community participation and beneficiation by ensuring that the communities are involved in the planning of every project relating to the dam. Job opportunities arising should benefit all the community members and should be allocated fairly. 	<ul style="list-style-type: none"> National Treasury (NT) Department of Public Works (DPW), or other government departments' involvement IYLM EMLM

KOMMANDODRIFT 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>sources and few hopes that this situation will change in the future.</p> <ul style="list-style-type: none"> There is high expectations of employment creation from the community when developing the RMP, this can be a challenge as the RMP is not aimed at creating employment for community. 	<ul style="list-style-type: none"> Alternative procurement strategies must be investigated where the PPP process is not feasible. These would have to be evaluated against the objectives of the Dam. Contracts need to be awarded against pre-set criteria which include environmental principles, skills transfer, commitment, intent, fees, expectations, existing entitlements, equity, employment, cost and impact. All commercial access, use and development activities within the Dam basin should be recreation related. Further it should not compromise the objective and policies for public access, use and development 	<ul style="list-style-type: none"> CHDM

4.4 FINANCIAL PLAN

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

The proposed IA (ECPTA) 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 visitor 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

- **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 (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 IA (leaser) and the lessee.

4.4.2 Target Market

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

- Tarkastad Town;
- Cradock Town;
- Farmers;
- 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 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 an IA 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 can be read in detail on **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 proposed that ECPTA be appointed as an IA 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

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 Kommandodrift 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) and the integrated resource management planning which consists of the institutional plan, zoning plan, strategic plan and the financial plan.

The key challenges identified include:

- Access road to the dam is in a bad condition;
- Limited supply of potable water to the communities;
- High unemployment rate around Tarkastad town;
- Presence of alien invasive plant species at the Dam;
- The Dam is allegedly silted;
- The alleged overgrazing upstream causes soil erosion which plays a role in the buildup of silt in the Dam;
- The area where the Dam is located is experiencing drought;
- Most community members are not aware that the dam is of public use; and
- Lack of community beneficiation.

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 of a Dam Management Committee (DMC) to serve as an advisory committee to the proposed IA;
- To avoid conflict amongst users, uncontrolled development and to protect the water resource, the permissible and non-permissible activities on the water- and shoreline surface are delineated in the Zoning Plan and covered under Section 4.2; and
- 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 18** illustrates the RMP & BP review framework.

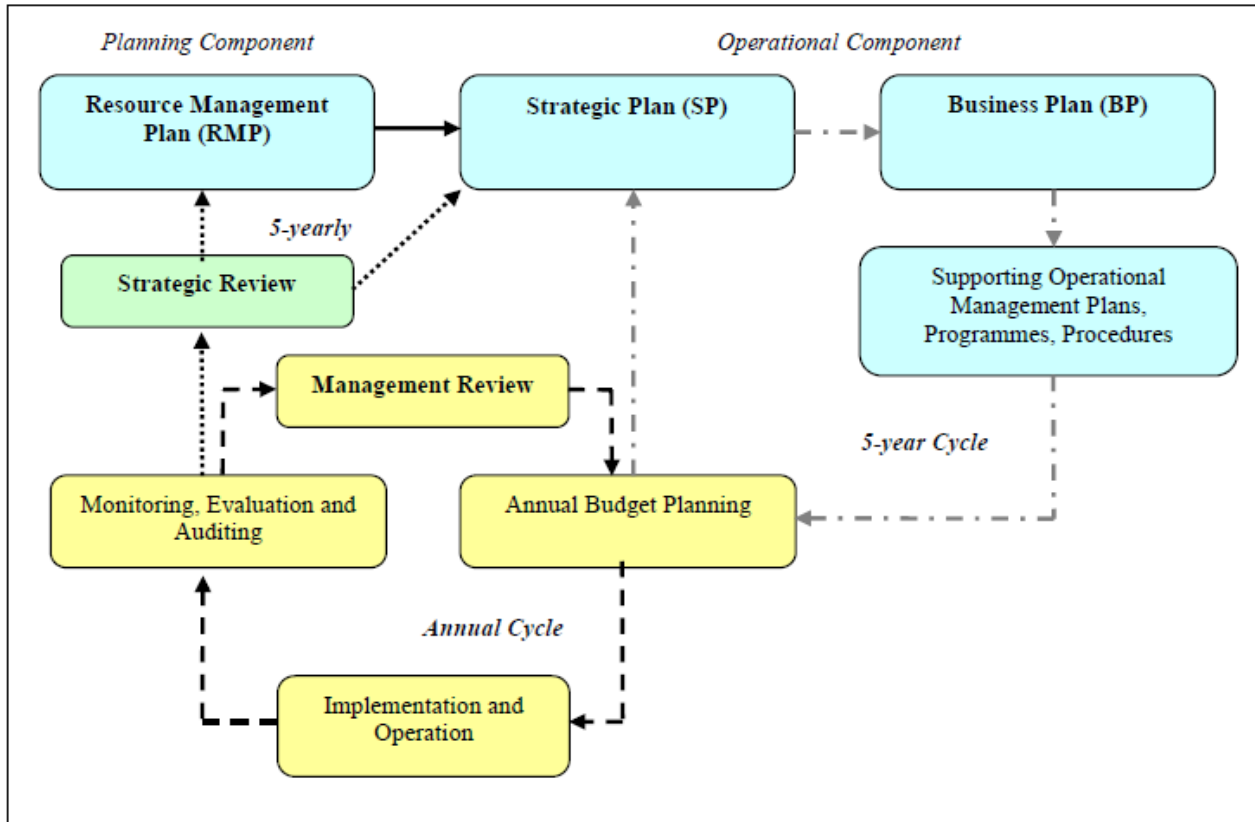


Figure 18: RMP and BP Review Framework

REFERENCES

Statistics South Africa, (2016), Community Survey [dataset].

Department of Water Affairs and Forestry, (1996), South African Water Quality Guidelines, Volume 2 - Recreational Water Use Manual Guideline.

Department of Water Affairs and Forestry, (1999), Guidelines for the Compilation of Zoning Plans for Government Waterworks.

Department of Water Affairs and Forestry, (2001), Generic Public Participation Guideline.

Department of Water Affairs and Forestry, (2003), Institutional Arrangements for Managing Use of Water for Recreational Purposes.

Department of Water Affairs and Forestry, (2003a). Draft Guideline. Methodology for Carrying Capacity Assessment for the Use of Water for Recreational Purposes.

Department of Water Affairs and Forestry, (2006), Recreational Water Use Manual Guideline.

McMaster, J C (2005), conserving the mountain grasslands of the Amatolas. Veld and Flora, Volume 91, Issue No 3.

Potts WM, Booth AJ, Hecht T and Andrew TG, (2006), The life history and fishery potential of *Labeo umbratus* (Teleostei: Cyprinidae) in five small South African reservoirs. Afr. J. Aquat. Sci. 31 (2) 285-295.

Raymond Mhlaba Local Municipality, (2017-2022). Approved IDP.

Rouhani Q, (1998). A Report and Recommendations on the Subsistence Fishery on Kommandodrift Dam. Report for the Council of Science and Industrial Research, South Africa.

Protected Area Management Plan Commando Drift Nature Reserve (2018-2028).PAMP

Department of Water and Sanitation, (February, 2016), List of registered Dams.

Department of Transport, (March, 2017), Inland Waters Transport Strategy, Eastern Cape Province, South Africa

Department of Water and Sanitation, (March, 2020), Dams storage water levels.

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