

Resource Management Plan **NTSHINGWAYO DAM**

REPORT – Volume 4 of 5

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water & sanitation

Department:
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REPUBLIC OF SOUTH AFRICA



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- Amajuba District Municipality;
- Dannhauser Local Municipality;
- KwaZulu-Natal Department of Agriculture and Rural Development;
- Department of Economic Development, Tourism and Environmental Affairs;
- Department of Public Works;
- Department of Tourism;
- Department of Transport;
- Department of Water and Sanitation;
- Ezemvelo KZN Wildlife;
- Newcastle Local Municipality; and
- Community members of Ward 1 (Dannhauser Local Municipality) and Ward 21 (Newcastle Local Municipality).

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

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Review Period	Month	Year				
Annual Review of Business Plan (BP)	December	2020 ¹	2021	2022	2023	2024
Five (5) yearly Review of Resource Management Plan (RMP)	December	2024				

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

AMENDMENTS PAGE

Revision No	Description	Date
1	Draft RMP for DWS Review	30/01/2018
2	Amended draft RMP for DWS Review	13/02/2018
3	Draft RMP for Public Review	06/03/2018
4	Final Draft RMP for DWS Approval	18/04/2018
5	Final RMP for DWS Approval	09/05/2018
6	RMP for DWS Approval	27/09/2018
7	RMP for DWS Approval	22/03/2019
8	RMP for DWS Approval	03/12/2019

EXECUTIVE SUMMARY

Purpose of the Resource Management Plan:

A Resource Management Plan (RMP) provides the principles and guidance within which the dam must be used for recreational purposes. 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 Ntshingwayo Dam, herein after referred to as the Dam, which is part of the Infrastructure Build, Operate and Maintenance (IBOM): Eastern Operations.

This RMP was developed in accordance with the Guidelines for the Compilation of Resource Management Plans (DWAf, 2006), to attain the objectives underlying sustainability in Section 2 of the National Water Act, 1998 (Act No. 36 of 1998) [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.

Mandate of Department of Water and Sanitation:

The Department of Water and Sanitation (DWS), through the NWA, mandates the Minister as the custodian of the Nation's water resources to ensure that state dams, including the Ntshingwayo 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.

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

Resource Management:

- The water resource located within or outside a protected area whether is subject to protection by legislation;
- Invasive alien species; and
- Water quality issues.

Recreational Industry Involvement:

- Conflict between users due to no management tool in place;
- Public safety with regards to the use of inland vessels; and
- Uncontrolled developments within the Dam basin (DWS Purchased Boundary).

Community Participation and Beneficiation:

- Challenges of communities regarding physical access and 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.

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

Description and Location of the Dam: The Dam has a gravity and earth-fill type dam wall that impounds the Ngagane River. The Dam is located on the demarcation boundary between Ward 1 of the Dannhauser Local Municipality (DLM) and Ward 21 of the Newcastle Local Municipality (NLM). The DLM and NLM falls under the jurisdiction of the Amajuba District Municipality

(ADM) in the KwaZulu-Natal Province of South Africa. The centre point GPS coordinates of the Dam are 28°0'2.40"S and 29°55'19.65"E.

Purpose of the Dam: The primary purpose of the Dam is to provide water for industry and domestic use. The secondary use of the Dam would offer recreational activities such as angling, bird and game viewing, camping, boating, sailing, water skiing and swimming.

Dam Ownership and Management: DWS owns the Dam and surrounding state land. It also operates the Dam for its primary purpose. The Dam is located within the Chelmsford Nature Reserve, which is managed by Ezemvelo KwaZulu Natal Wildlife (EKZNW). The secondary use of the Dam is currently managed by the Chelmsford Management structure. Through the development of the RMP, EKZNW is proposed as an Implementing Agency (IA), and shall be appointed by DWS to facilitate the implementation of the objectives and identified action projects in line with the requirements of the Ntshingwayo Dam RMP. The IA will sign a Memorandum of Agreement (MOA) with DWS, which shall be a legal 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 and planning partners. Authority and public meetings were conducted to obtain inputs (challenges and objectives) regarding the Dam. The communities consulted during the stakeholder engagement meetings are situated within Ward 1 of DLM and Ward 21 of NLM. These meetings were conducted in accordance with the Guidelines for Public Participation (DWAF, 2001) that outlines three broad phases for public participation namely the Planning, Participation and Exit phase.

Identified Objectives: During the authority and public meetings, issues and concerns were raised from which the following objectives were formulated:

- To have Ntshingwayo Dam free of alien invasive vegetation in order to support the proposed recreational activities and to maintain the indigenous ecological aspect of the area;
- To manage the Dam and conserve the portions of protected areas within the DWS Purchased Boundary to achieve the biodiversity conservation, eco-tourism and partnership objectives;
- To have alternative access points to the Dam in order to accommodate local communities;
- To introduce small-scale fishery at the Dam;
- To provide suitable recreational infrastructures that will effectively support the identified activities in an aesthetically pleasing, functional, safe and environmentally sound manner;
- To install a pipeline from the Dam to Mosdale and Haig communities for livestock watering, alternatively construct water ponds near the dam to supply water for livestock;
- To uplift the local economy and increase benefit flows to the surrounding communities through community empowerment; and
- To establish an effective institutional structure that can manage recreational use of the Dam in an acceptable manner, which is also representative of all the Stakeholders.

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

“To have a locally and internationally recognised green tourism destination of choice with upmarket accommodation that has minimal negative impact, allowing for environmental and tourism educational tours while creating a market that promotes community participation and beneficiation”.

Tourism Potential: The potential tourist attraction within the DWS purchased boundary includes the development of low impact luxury chalets. The identification of alternative economic opportunities and areas of investments for recreation and tourism could potentially:

- Bring business opportunities in the area;
- Introduce a small-scale fishery that could bring food security to the local community;
- Ensure equitable access to the Dam;
- Ensure safety while accessing and using the Dam;
- Ensure that the local community benefit from potential employment opportunities and skills development through Public Private Partnerships (PPPs); and
- Ensure greater participation by the local communities in decision-making (*via* the DMC) with respect to activities, events and/or developments proposed within the DWS Purchased Boundary.

The main challenges identified comprise:

- The Dam is located in a remote area, where there is limited public transport;
- The Dam is infested with alien invasive plant species that can outcompete indigenous populations of threatened and protected plant species within the DWS Purchased Boundary, and thereby can negatively impact on the biodiversity richness of the area;
- There is a lack of community awareness regarding environmental and tourism education;
- Lack of water supply to the nearby community discourages the community to engage in tourism activities;
- EKZNW makes accessing the Dam difficult for the local community due to high costs of access fees;

- There is little to no transparency in informing the local communities about potential opportunities arising at the Dam for recreational purposes; and
- Drowning incidents, due to lack of swimming and boating skills.

Recommendations:

This RMP recommends the following immediate actions:

- Appoint EKZNW as an IA to manage recreational use of the Dam on behalf of DWS;
- Establish a Dam Management Committee (DMC) to serve as an advisory committee to the proposed IA;
- Ensure organised development, equitable visitor access, sound resource management and optimal community beneficiation, as per the proposed Zoning Plan in Section 4.2;
- Ensure public safety with regards to the use of inland vessels, as per the Carrying Capacity in Section 4.2.3;
- Ensure resource management, resource utilisation and benefit flow management, as per the Strategic Plan and Key Performance Areas in Section 4.3;
- Programmes for controlling terrestrial and aquatic alien invasive species should be initiated;
- A policy on waste management must be enforced and adhered to;
- All infrastructural development to enhance the sense of place of the Dam, while complying with all environmental and related regulatory requirements; and
- Develop a permit system for subsistence fishing together with the relevant Provincial environmental authority.
- Implement skills development programmes where opportunities exist.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	II
TITLE AND APPROVAL PAGE.....	III
AMENDMENTS PAGE.....	IV
EXECUTIVE SUMMARY.....	V
LIST OF TABLES.....	X
LIST OF FIGURES.....	X
LIST OF ACRONYMS.....	XI
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.....	9
2.1 BIOPHYSICAL ENVIRONMENT.....	9
2.1.1 Climate.....	9
2.1.2 Topography.....	9
2.1.3 Geology and Soils.....	9
2.1.4 Hydrology.....	10
2.1.5 Protected Areas.....	10
2.1.6 Flora.....	11
2.1.7 Fauna.....	12
2.2 BUILT ENVIRONMENT.....	13
2.2.1 Roads and Land-Based Transportation.....	13
2.2.2 Other On-Site Facilities.....	13
2.2.3 Fencing.....	13
2.2.4 Management and Operation.....	13
2.2.5 Safety.....	14
2.2.6 Legal.....	14
2.2.7 Zoning Plan.....	14
2.3 SOCIO-ECONOMIC ENVIRONMENT.....	14
2.3.1 Community Beneficiation.....	17
CHAPTER 3: RESOURCE MANAGEMENT PLAN PROCESS.....	19
3.1 DEFINITION OF RMP.....	19
3.2 PROCESS TRIGGERS.....	19
3.3 RMP DEVELOPMENT PROCESS.....	20
3.4 RMP PLANNING STAGES.....	21
3.4.1 Desktop Study.....	21
3.4.2 Site Inspection.....	21
3.4.3 Public Participation.....	21
3.4.4 Planning Partners.....	22
3.5 RMP DATA ANALYSIS.....	25
3.5.1 Encumbrance Survey (Phase 2).....	25

3.5.2	SWOT Analysis and Objective Identification (Phase 3).....	26
3.5.3	Research/ Information Generation (Phase 4)	27
CHAPTER 4: INTEGRATED RESOURCE MANAGEMENT PLANNING		29
4.1	INSTITUTIONAL PLAN	30
4.1.1	Implementing Agency (IA)	30
4.1.2	Dam Management Committee (DMC)	30
4.1.4	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.....	42
4.3	STRATEGIC PLAN	43
4.3.1	KPA 1: Resource Management	44
4.3.2	KPA 2: Resource Utilisation	45
4.3.3	KPA 3: Benefit Flow Management.....	46
4.4	FINANCIAL PLAN	47
4.4.1	Potential Sources of Revenue.....	47
4.4.2	Target Market.....	47
4.4.3	Co-Funding	47
CONCLUSION AND WAYFORWARD.....		49
REFERENCES.....		51
APPENDICES.....		52
APPENDIX A:	STAKEHOLDER DATABASE REGISTER.....	52
APPENDIX B:	NEWSPAPER ADVERT.....	52
APPENDIX C:	FLYERS	52
APPENDIX D:	EMAILS	52
APPENDIX E:	BACKGROUND INFORMATION DOCUMENT (BID)	52
APPENDIX F:	COMMENTS AND RESPONSES REGISTER	52
APPENDIX G:	EXAMPLES OF SUCCESSFULLY CO-FUNDED PROJECTS	52
APPENDIX H:	POTENTIAL CO-FUNDERS	52
APPENDIX I:	BUSINESS PLAN	52

LIST OF TABLES

Table 1: Ntshingwayo 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 the identified Endangered, Critically Endangered and Near Threatened Bird Species	12
Table 5: Education Level of Ward 1 (DLM) and Ward 21 (NLM)	16
Table 6: Employment Status of Ward 1 (DLM) and Ward 21 (NLM)	16
Table 7: Summary of triggers and potential challenges for Ntshingwayo Dam	19
Table 8: Planning Partners for the Ntshingwayo Dam RMP	23
Table 9: Summary of Biophysical Legal Encumbrances and Socio-cultural Encumbrances	25
Table 10: SWOT Analysis for Ntshingwayo Dam	26
Table 11: Proposed Water Surface Zoning Description.....	36
Table 12: Proposed Shoreline Zoning Description	39
Table 13: Area required per user	42
Table 14: Strategic Plan for KPA 1: Resource Management.....	44
Table 15: Strategic Plan for KPA 2: Resource Utilisation	45
Table 16: Strategic Plan for KPA 3: Benefit Flow Management	46

LIST OF FIGURES

Figure 1: Locality Map for Ntshingwayo Dam	3
Figure 2: Average Temperature and Rainfall of the Vryheid area	9
Figure 3: Fluctuations of Ntshingwayo Dam water level over a year	10
Figure 4: Chelmsford Nature Reserve - Formal Land-Based Protected Area (NBA 2011).	11
Figure 5: Dannhauser Local Municipality Ward 1 Delimitation (2016)	15
Figure 6: Newcastle Local Municipality Ward 21 Delimitation (2016)	15
Figure 7: Population size of Ward 1 of DLM	16
Figure 8: Population size of Ward 21 of NLM	16
Figure 9: Education Level of Ward 1 (DLM) and Ward 21 (NLM)	16
Figure 10: Employment Status of Ward 1 (DLM) and Ward 21 (NLM)	17
Figure 11: Individual Monthly Income for Ward 1 (DLM) and Ward 21 (NLM)	17
Figure 12: RMP Procedure.....	20
Figure 13: Integrated Resource Management Planning.....	29
Figure 14: Proposed DMC.....	31
Figure 15: Existing CD: IO MANCO.....	33
Figure 16: Proposed NPSC	34
Figure 17: Proposed Water Surface Zoning.....	37
Figure 18: Proposed Shoreline Zoning Map	40
Figure 19: Proposed Overall Zoning Map	41
Figure 20: RMP and BP Review Framework	50

LIST OF ACRONYMS

ADM	Amajuba District Municipality
ATON	Aid(s) to Navigation
BID	Background Information Document
BP	Business Plan
CATHSETA	Culture, Arts, Tourism, Hospitality, Sport Sector, Education and Training Authority
CD: IO MANCO	Chief Directorate: Infrastructure Operations Management Committee
CIWSP	Co-operative Inland Watercourse Safety Programme
CNR	Chelmsford Nature Reserve
CoGTA	Department of Corporative Governance and Traditional Affairs
DAFF	Department of Agriculture, Forestry and Fisheries
DARD	Department of Agriculture and Rural Development
DEA	Department of Environmental Affairs
DHS	Department of Human Settlements
DLM	Dannhauser Local Municipality
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
EDTEA	Department of Economic Development, Tourism and Environmental Affairs
EKZNW	Ezemvelo KwaZulu-Natal Wildlife
EPWP	Expanded Public Works Programme
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
KPA	Key Performance Area
KZNDARD	KwaZulu-Natal Department of Agriculture and Rural Development
LAAP	Local Accountable Aids to Navigation Parties
LED	Local Economic Development
MOA	Memorandum of Agreement
NDT	National Department of Tourism
NEMA	National Environment Management Act, 1998 (Act No. 108 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEMPAA	National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)
NGO	Non-Governmental Organisation
NLM	Newcastle Local Municipality

NPSC	National Project Steering Committee
NT	National Treasury
NWA	National Water Act, 1998 (Act No. 36 of 1998)
NWRS	National Water Resource Strategy
OMC	Operations Management Committee
PCC	Physical Carrying Capacity
PFMA	Public Finance Management Act, 1999 (Act No. 29 of 1999)
PP	Public Participation Process
PPP	Public Private Partnership
PSP	Professional Service Provider
RCC	Real Carrying Capacity
RMP	Resource Management Plan
SAMSA	South African Maritime Safety Authority
SANBI	South African National Biodiversity Institute
SAPS	South African Police Service
SASCOC	South African Sports Confederation and Olympic Committee
SETA	Sector Education and Training Authority
SWOT	Strengths, Weaknesses, Opportunities and Threats
ToR	Terms of Reference
WfW	Working for Water
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 to ensure that the government waterworks (GWWs), including the Ntshingwayo Dam, are protected, used, developed, managed and controlled in a sustainable manner and to the benefit of all as contemplated in Section 2 of the NWA. A number of factors have prompted the need to compile Resource Management Plans (RMPs), which *inter alia* include the following:

Resource Management:

- The water resource located within or outside a protected area whether is subject to protection by legislation;
- Invasive alien species; and
- Water quality issues.

Recreational Industry Involvement:

- Conflict between users due to no 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 and 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.

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

1.2 PURPOSE OF THIS RMP

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

This RMP is developed in accordance with the Guidelines for the Compilation of Resource Management Plans (DWAF, 2006) for the Ntshingwayo 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 Ntshingwayo Dam has an earth-fill and gravity type dam wall which impounds the Ngagane River. The water surface area of the Dam is approximately 3 610 hectares with a full capacity of approximately 2 11 million cubic meters. **Table 1** shows the Dam profile.

The Dam is located on the demarcation boundary between Ward 1 of the Dannhauser Local Municipality (DLM) and Ward 21 of the Newcastle Local Municipality (NLM). The DLM and NLM falls under the jurisdiction of the Amajuba District Municipality (ADM) in the KwaZulu-Natal Province of South Africa, as shown in **Figure 1**. The centre point GPS coordinates of the Dam are 28°0'2.40"S and 29°55'19.65"E.

1.4 PURPOSE OF THE DAM

The primary purpose of the Dam is to provide water for industry and domestic use.

The Dam offers recreational activities (secondary use) such as angling, bird and game viewing,

camping, boating, sailing, water skiing and swimming.

1.5 DAM OWNERSHIP AND MANAGEMENT

DWS owns the Dam and surrounding state land. It also operates the Dam for its primary purpose. The RMP focus area is mainly on the Dam, comprising the water surface and the DWS Purchased Boundary.

The Dam is situated within the Chelmsford Nature Reserve (CNR), a formal land-based protected area (NBA, 2011). Ezemvelo Kwa-Zulu Natal Wildlife (EKZNW) is mandated to manage the CNR, including the Dam. The recreational facilities within the DWS Purchased Boundary are managed by the Chelmsford Management Structure.

Through the development of the RMP, EKZNW is proposed as the Implementing Agency (IA) for the management of using water for recreational purposes (secondary use) within the DWS Purchased Boundary.

Table 1: Ntshingwayo Dam Profile

Ntshingwayo Dam Profile	
Location	South Africa
Province	KwaZulu-Natal
District Municipality	Amajuba
Local Municipality	Dannhauser and Newcastle
Nearest Town	Newcastle
Completion Year	1961
Dam Raised Completion Year	1982
Coordinates	28°0'2.40"S 29°55'19.65"E
Purpose	Industrial and Domestic
Owner	DWS
Quaternary Catchment	V31E
Water Management Area	Pongola-Mzimkulu
River	Ngagane
Capacity (Mm³)	211 258
Surface area (ha)	3 610
Wall type	Earth-fill and Gravity
Wall Height (m)	23
Crest Length (m)	1 549

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

NTSHINGWAYO DAM RESOURCE MANAGEMENT PLAN

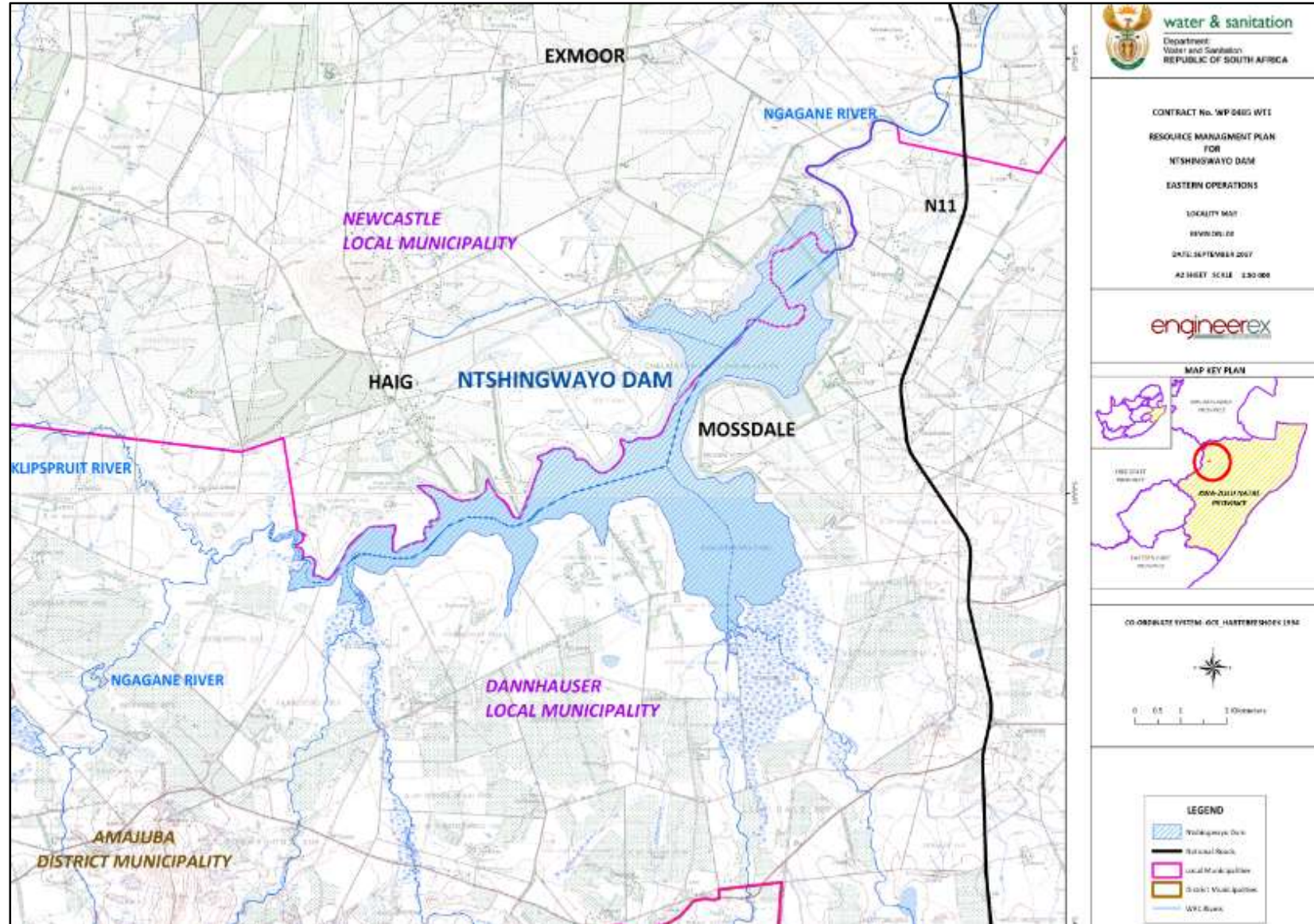


Figure 1: Locality Map for Ntshingwayo Dam

1.6 LEGISLATIVE FRAMEWORK

The table below list the key data sources used to develop the RMP.

Table 2: Key Data Sources Used to Develop the RMP

Policy and Guidelines	Description
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.
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.
Consideration on Institutional Arrangement for Managing Use of Water for Recreational Purposes (DWAF, 2003)	It outlines some of the institutional issues at a local level and makes recommendations about the conditions under which different Institution Management arrangements may be considered.
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.
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.
Guidelines for Compilation of Zoning Plans for Government Waterworks (DWAF, 1999)	It provides direction on the compilation of zoning plans for government waterworks (within DWS purchased boundary).
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.
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.
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.

The Legislative framework applicable to the management and use of the Dam for recreational purpose is summarised in the table below.

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

Legislation: Acts, ordinances, bylaws	
Constitution	Significance to the RMP:
Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996), Environmental Rights (Section 24)	<p>Section 24 - Everyone has the right:</p> <ol style="list-style-type: none"> 1. to an environment that is not harmful to their health or wellbeing, 2. to have an environment protected for the benefit of present and future generations, through reasonable legislative and other measures that- <ol style="list-style-type: none"> a. prevent pollution and ecological degradation b. promote conservation and secure ecologically sustainable development and use natural resources while promoting justifiable economic and social development.
National Legislation	Significance to the RMP:
Conservation of Agricultural Resource Act, 1983 (Act No. 43 of 1983) [CARA]	<p>Provides for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.</p> <p>Regulation 7 and 8 within the same Act deals with the protection of wetlands and water courses, while regulations 15 and 16 deals with Alien Invasive Plant Species and bush encroachment.</p>
National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA]	NEMA serves as South Africa's Environmental Framework Legislation. It was designed to provide for co-operative and Integrated Environmental Governance by establishing a general framework for decision-making on matters affecting the environment.
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) [NEMBA]	<p>This Act aims to provide the framework, norms and standards for the conservation, sustainable use and equitable benefit-sharing of South Africa's biological resources.</p> <p>The Alien and Invasive Species Regulations for this Act came into effect 01 October 2014. NEMBA together with these Regulations aim to prevent the introduction and spread of alien and invasive species across South Africa.</p>
National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) [NEMPAA]	The aim of this Act is to provide for the protection and conservation of ecologically viable areas, which are representative of South Africa's Biodiversity, as well as natural landscapes and seascapes.
National Environmental Management: Waste Act, 2014 (Act No. 59 of 2008)	Provides for the national domestic waste collection standards and national norms and standards for the storage of waste.

NTSHINGWAYO DAM RESOURCE MANAGEMENT PLAN

Legislation: Acts, ordinances, bylaws	
[NEWA]	
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]	<p>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 state owned land may be made available for recreational purposes, subject to controls determined by the Minister and regulations made by the Minister.</p> <p>Using water for recreational purposes is a water use under Section 21K and can be exercised as permissible use of water under Schedule 1 of the Act. However, this provision does not cater for commercial use hence the RMP should be implemented in line with General Strategic Plan for commercialisation of Tourism Public Private Partnerships at Government Waterworks, 2009 and PFMA Treasury Regulation 16. Once the RMP has been approved, the RMP will regulate access and use of the Dam. It is important to note that users will need to comply with other relevant legislation.</p>
Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003)	It aims to address inequities 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.
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 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.

NTSHINGWAYO DAM RESOURCE MANAGEMENT PLAN

Legislation: Acts, ordinances, bylaws	
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.
Occupational Health and Safety Amendment Act 181 of 1993 (G.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.
Provincial Legislation	Significance to the RMP:
KwaZulu-Natal Nature Conservation Management Act, 1997 (Act No. 9 of 1997)	The functions of the Board are <i>inter alia</i> to make recommendations to the Minister in relation to policy formation for the coordination of ecotourism projects involving both government and private initiatives, including community-linked projects associated with protected areas.
Municipal Policy, By-Laws, Reports & Guidelines	Significance to the RMP:
New Castle Municipality: Refuse By-Laws, 2009	It requires that no person shall dump, deposit, discharge, spill or release waste or cause or permit such waste to be dumped, discharged, spilled or released, whether or not the waste is in container or receptacle, in or at any place, whether publicly or privately owned, including but not limited to vacant land, rivers, watercourse, catchments, sewers and storm water drains.

NTSHINGWAYO DAM RESOURCE MANAGEMENT PLAN

Legislation: Acts, ordinances, bylaws	
Amajuba District Municipality Water bylaw	Water services rendered to a consumer are subject to the provisions of these By-laws and the conditions should be contained in the relevant agreement.
Chelmsford Nature Reserve (2009 – 2013). Integrated Management Plan	The Integrated Management Plan forms the framework within which the Protected Area will be managed, aligned to the Protected Areas Act (Act No. 57 of 2003), and developed in an endeavour to achieve the biodiversity conservation, ecotourism and partnership objectives.
Newcastle Local Municipality Tourism Development Plan (2013).	It informs the budget and also tries to respond to the aspirations and needs of the community and sets the level of economic growth for the city through the identification of economic opportunities and areas of investments.
Dannhauser Local Municipality IDP (2017-2018)	There are specific opportunities for the tourism sector in the Dannhauser Local Municipality (DLM), based on the natural attractions of the area, such as the Chelmsford Nature Reserve and the Ntshingwayo Dam. The DLM have developed a Tourism Master Plan to increase the tourism GDP levels and tourism employment levels in the province.
Amajuba District Municipality Integrated Development Plan 2018/19	The municipality is vested in the programmes aimed at upliftment of the communities within the jurisdiction of the ADM in partnership with sector departments.

CHAPTER 2: ENVIRONMENTAL ANALYSIS

2.1 BIOPHYSICAL ENVIRONMENT

2.1.1 Climate

Ntshingwayo Dam is located in an area with high summer rainfall. The least amount of rainfall occurs in June, with an average of 9 mm. The greatest amount of rainfall occurs in January, with an average of 134 mm (Climate Data. ORG, 2016).

According to the Chelmsford Nature Reserve Integrated Management Plan (CNR IMP, 2009-2013), the area receives most of its rain between

November and February, with the peak rainfall experienced in January.

The average annual temperature of the area is 17.3°C. The temperatures are highest on average in January, at around 21.8°C. The lowest average temperatures in the year occur in June, when it is around 10.8 °C (Climate Data. ORG, 2016).

Figure 2 illustrate the average temperatures and rainfall patterns for the area in 2016.

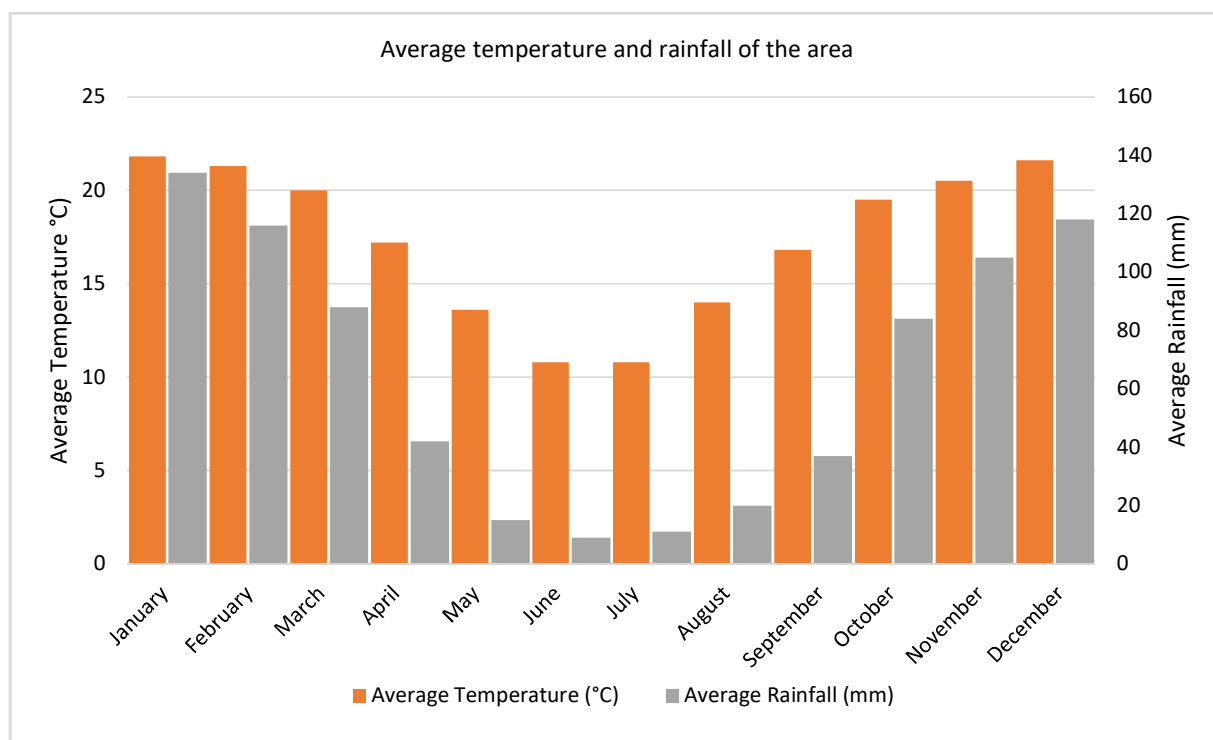


Figure 2: Average Temperature and Rainfall of the Vryheid area

Source: Adapted from Climate Data. ORG, 2016

2.1.2 Topography

The Dam falls is situated in an open basin characterised by rolling plains forming a gentle, undulating landscape, which is dissected by ridges of volcanic dolerite (such as the prominent Leokop Hill). The landscape around

the Dam is incised by several drainage lines running into the Dam (CNR IMP, 2009-2013).

2.1.3 Geology and Soils

The geology of the area is dominated by the Ecca Group and Arenite, interspersed with dolerite intrusions. Arenite consists mainly of Sandstone of the Vryheid Formation and, to a lesser extent,

shale of the Volksrust Formation with small areas of Dolerite and Alluvium (Johnson *et al.*, 2006). A small area of bedrock occurs in the north-west of CNR, giving rise to shallow soils and short grass in the area (CNR IMP, 2009-2013).

2.1.4 Hydrology

Water Surface

The Dam lies within the V31E quaternary drainage region which forms part of the Pongola-Mzimkulu Water Management Area (WMA).

The Dam impounds the Ngagane River. The Dam was approximately 73% full at the time of developing the RMP (DWS, 2017). **Figure 3** shows the fluctuations of water levels over an interval of one year.

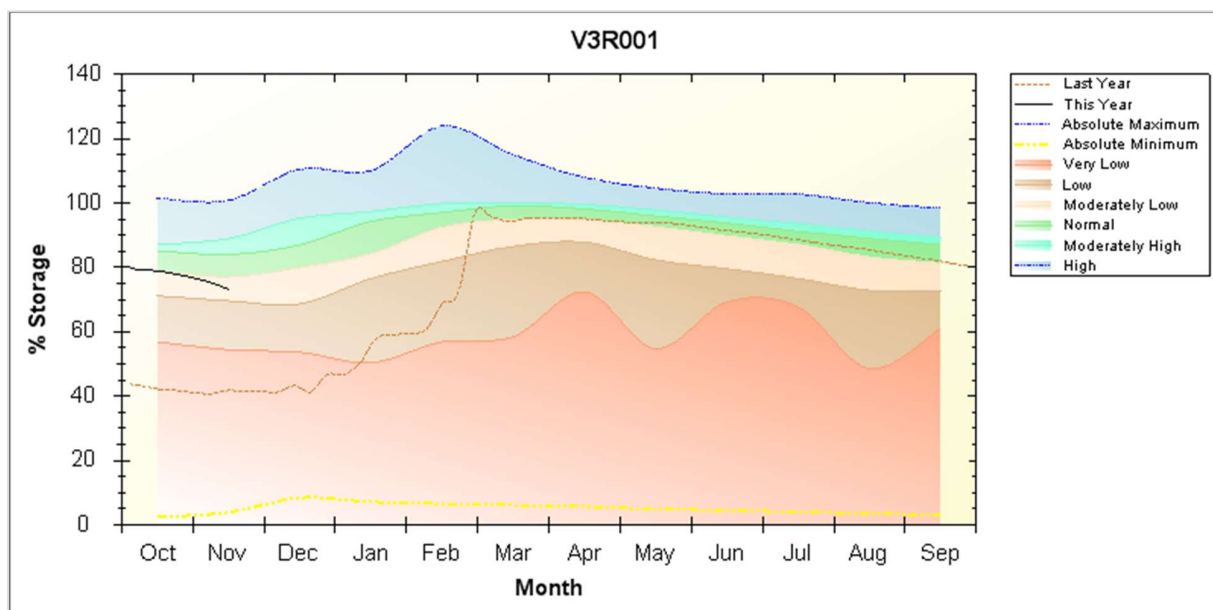


Figure 3: Fluctuations of Ntshingwayo Dam water level over a year

Source: DWS, 2018

Water Quality

At the time of developing the RMP, the only water quality indicator result available was for pH, which was found to be within the acceptable Target Water Quality Range (TWQR) with a pH between 6.5 - 8.5, indicating that minimal eye irritation might occur once in contact with water. Owing to the absence of TWQR test samples (not only pH), it is inconclusive if the water is fit for recreational use. DWS should conduct regular water quality tests in terms of the acceptable TWQR in order to make a conclusive decision on the suitability of the water for recreational use. Hence, precautionary measures should be exercised for contact sports at the Dam.

2.1.5 Protected Areas

The Dam is situated within the Chelmsford Nature Reserve (CNR), a formal land-based protected area (NBA, 2011). The DWS and the IA will provide an opportunity for its Governmental planning partners and agencies (refer to section 3.4.4) to actively participate and be involved throughout the planning and implementation of the functions, objectives and vision of the RMP. Allowing the IA and the applicable authority(ies) to make informed decisions regarding the potential benefits that can emanate from the management and utilisation of the Dam for recreational purposes,

and the opportunity to disseminate potential benefits to the neighbouring communities in an equitable manner based on sound Government policy supported by the relevant authorities.

It is emphasized that the Dam is situated within the CNR (**Figure 4**), which is a Formal Protected Area (NBA, 2011) and therefore only certain

types of developments and activities can be permissible and/or authorised within the NR and DWS Purchased Boundary. In addition, the IA and Governmental planning partners and agencies should assist in determining recreational events that are compatible with the area, taking into account the sensitivity of the Nature Reserve.

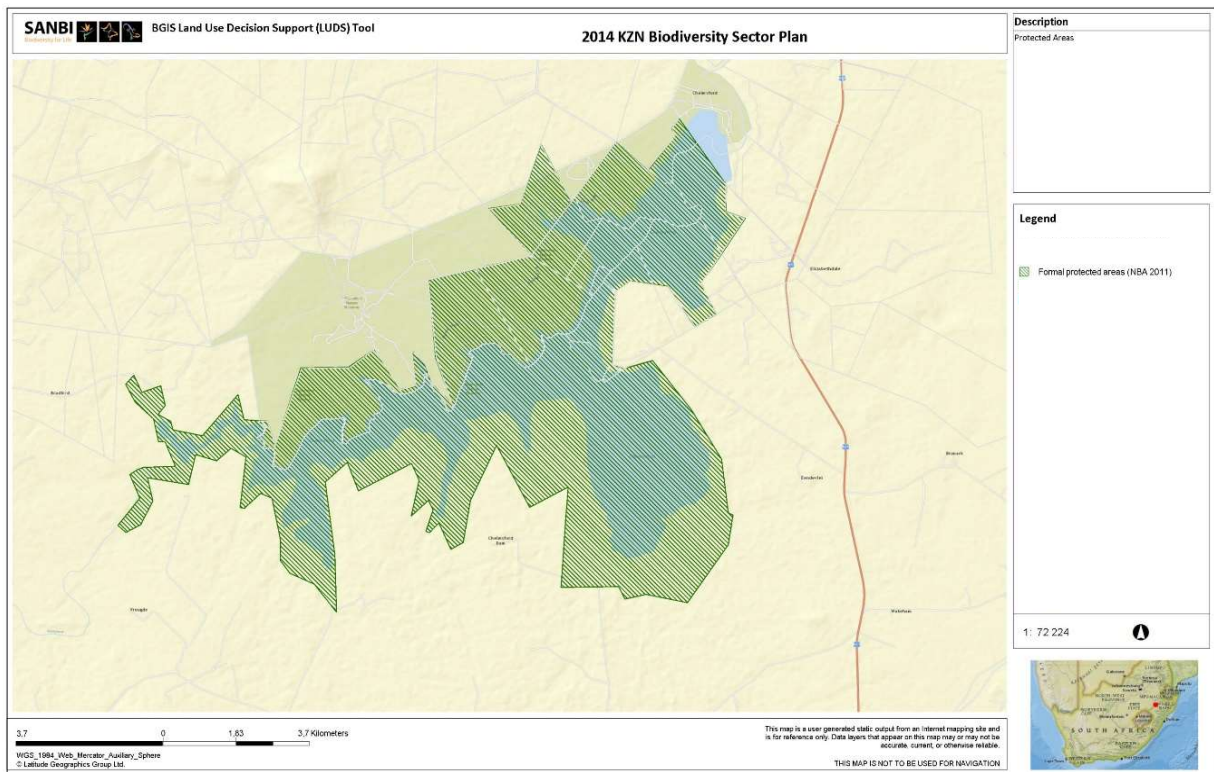


Figure 4: Chelmsford Nature Reserve - Formal Land-Based Protected Area (NBA 2011).

Source: SANBI BGIS Map Viewer

2.1.6 Flora

The Dam falls within the Northern KwaZulu-Natal Moist Grassland which is characterised by medium to tall-grass species (Mucina, L. & Rutherford, M.C, 2006). Tall-grass species are dominant in areas that were previously disturbed by land use activities such as maize cultivation (CNR IMP, 2009-2013).

These disturbed areas are now characterised by taller unpalatable and pioneer grasses such as Common Thatching Grass (*Hyparrhenia hirta*),

Red Grass (*Themeda triandra*); Weeping Love Grass (*Eragrostis curvula*), Tough Love Grass (*Eragrostis plana*), Ratstail Dropseed (*Sporobolus africanus*) and Wire Grass (*Elionurus muticus*).

The following alien plants species have been identified at the reserve:

- Silver wattle (*Acacia dealbata*);
- Long-leaved wattle (*Acacia longifolia*);
- Black wattle (*Acacia Mearnsii*);
- Eucalyptus spp (*Eucalyptus spp*); and
- Bramble (*Rubus cuneifolius*).

Further spreading of terrestrial alien plant species can have a detrimental impact on the ecology of the Dam and can outcompete indigenous plants species as well as hinder other proposed recreational activities such as game viewing, camping and picnicking.

2.1.7 Fauna

The Dam is located within a protected area that is rich in aquatic and wildlife diversity. Provided below are the fish, birds, amphibians, reptiles and mammals found within the area.

Fish

There are two (2) fish species namely the Tugela Labeo (*Labeo rubromaculatus*) and the Yellowfish which are endemic to KwaZulu- Natal Province (CNR IMP, 2009-2013). The two (2) exotic fish species (Carp and Sharptooth Catfish) are important angling species at the CNR which supports several recreational fishing associations through fishing competitions.

Birds

Approximately 23 bird species have been recorded within the CNR. **Table 4** shows the list of endangered, critically endangered and near threatened red data bird species within the nature reserve and surrounding areas of the Dam (CNR IMP, 2009-2013).

Table 4: List of the identified Endangered, Critically Endangered and Near Threatened Bird Species.

Common Name	Conservation Status (SA)
Half-collared Kingfisher	Near Threatened
Blue Crane	Near Threatened
Tawny Eagle	Endangered
Wattled Crane	Critically Endangered
Grey Crowned Crane; Crowned Crane	Endangered
Pallid Harrier	Near Threatened
Black Harrier	Endangered
African Marsh-Harrier	Endangered
Saddle-billed stork	Endangered

Common Name	Conservation Status (SA)
Black-bellied Bustard; Black-bellied Korhaan	Near Threatened
Yellow-billed stork	Endangered
Lesser Flamingo	Near Threatened
Greater Flamingo	Near Threatened
Martial eagle	Endangered
Double-banded Courser	Near Threatened

Mammals

The reserve holds the single largest population of the endangered Oribi antelope (*Ourebia ourebi*), and two (2) red data species namely the Aardwolf (*Proteles cristatus cristatus*) and the African Wild Cat (*Felis lybica*). The reserve also has three (3) endemic mammal species namely the Hottentot golden mole (*Amblysomus hottentotus Longiceps*), Black wildebeest (*Connochaetes gnou*) and Blesbok (*Damaliscus pygargus phillipsi*). The largest population within the reserve is Springbok (*Antidorcas marsupialis*) which is regarded as least of concern due to their widespread distribut

2.2 BUILT ENVIRONMENT

The aspects investigated are presented under the following sub-headings:

- Roads and land-based transportation;
- Other on-site facilities;
- Fencing;
- Management and operation;
- Safety;
- Legal; and
- Zoning Plan.

2.2.1 Roads and Land-Based Transportation

Surrounding Roads: The Dam is situated along National road (N11).

Internal Road and Circulation: There are several internal gravel roads that are used within the nature reserve.

Parking: There is no demarcated area for parking, however, there is open space to provide parking.

Access Points: There are currently three (3) existing access points to the Dam (refer to **Figure 19** for the proposed Zoning Plan). The land surrounding the Dam and Nature Reserve comprise mainly of farm land which makes the viability for additional access points limited.

2.2.2 Other On-Site Facilities

The on-site facilities at the Dam includes:

- Tourism/ Recreational Facilities:
 - 6 x picnic facilities;
 - 12 x 5-bed tourist chalets;
 - 5 wooden and 2 brick ablution blocks for visitors;
 - Boat club facility;
 - 5 km day walk trail; and
 - Hunters lodge and Boma.
- Administration and Management Facilities:
 - Main and access control offices at the entrance gate;

- Main workshop;
- 3 x staff housing units (management);
- 25 x 2-roomed staff housing units;
- 2 x water storage reservoirs;
- 1 x water purification plant;
- Tar (4.2km) and gravel (27km) roads;
- Porters' staff inspection quarters;
- 2 x water pumps; and
- 1 x borehole.

2.2.3 Fencing

The Dam is within a fenced and enclosed protected area giving the Dam a safer environment for visitors and tourists.

2.2.4 Management and Operation

The management and primary operation of the Dam is done by the DWS. The RMP focus area is on the water surface and the DWS purchased boundary. Outside factors such as pollution that might have an impact on the Dam are also considered.

The recreational use of the Dam is currently managed by the Chelmsford Management structure. The Chelmsford Nature Reserve already have an Integrated Management Plan (IMP) which is used to manage the Nature Reserve, including the Dam. Through the development of this RMP process, EKZNW is proposed as an IA for the management of the Dam for recreational purposes.

There are currently no 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 watercourse have a responsibility to ensure that the required fixed and/or floating AtoN are provided after obtaining the necessary support from the DWS and thereafter the permission by South African

Maritime Safety Authority (SAMSA).

2.2.5 Safety

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

2.2.6 Legal

At the time of developing the RMP, the CNR already was in possession of the CNR Integrated Management Plan (CNR IMP 2009-2013) used to manage the Nature Reserve, including the Dam.

There are no written or formal agreements that exist with CNR and any of the water users or surrounding landowners (CNR IMP, 2009-2013).

The CNR does however have informal lease agreements with the Aquatic Boat Club and the South Africa Caravan Club. Verbal agreements exist with the various fishing club associations such as Breakwater Fishing, NC Angling, Doc Rats, Natalatia, Kingfisher Ladysmith, North City and Riverside.

2.2.7 Zoning Plan

The previous Zoning Plan for Ntshingwayo Dam was developed by EKZNW, as part of the CNR Integrated Management Plan (CNR IMP, 2009 2013). The Zoning Plan only depicted the shoreline zoning for the Dam.

The updated Zoning Plan for Ntshingwayo Dam demarcates zones for permissible and non-permissible activities within the shoreline and water surface zones (refer to section 4.2.).

2.3 SOCIO-ECONOMIC ENVIRONMENT

The purpose of assessing the socio-economic conditions is to determine matters that need to be addressed through the implementation of the

RMP to uplift the standard of living of the communities. The study focuses on the socio-economic conditions of Ward 1 of DLM and Ward 21 of NLM, refer to **Figure 5** and **Figure 6** for the Municipal Ward Boundaries.

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

- Population size;
- Education level;
- Employment status; and
- Community beneficiation.

NTSHINGWAYO DAM RESOURCE MANAGEMENT PLAN

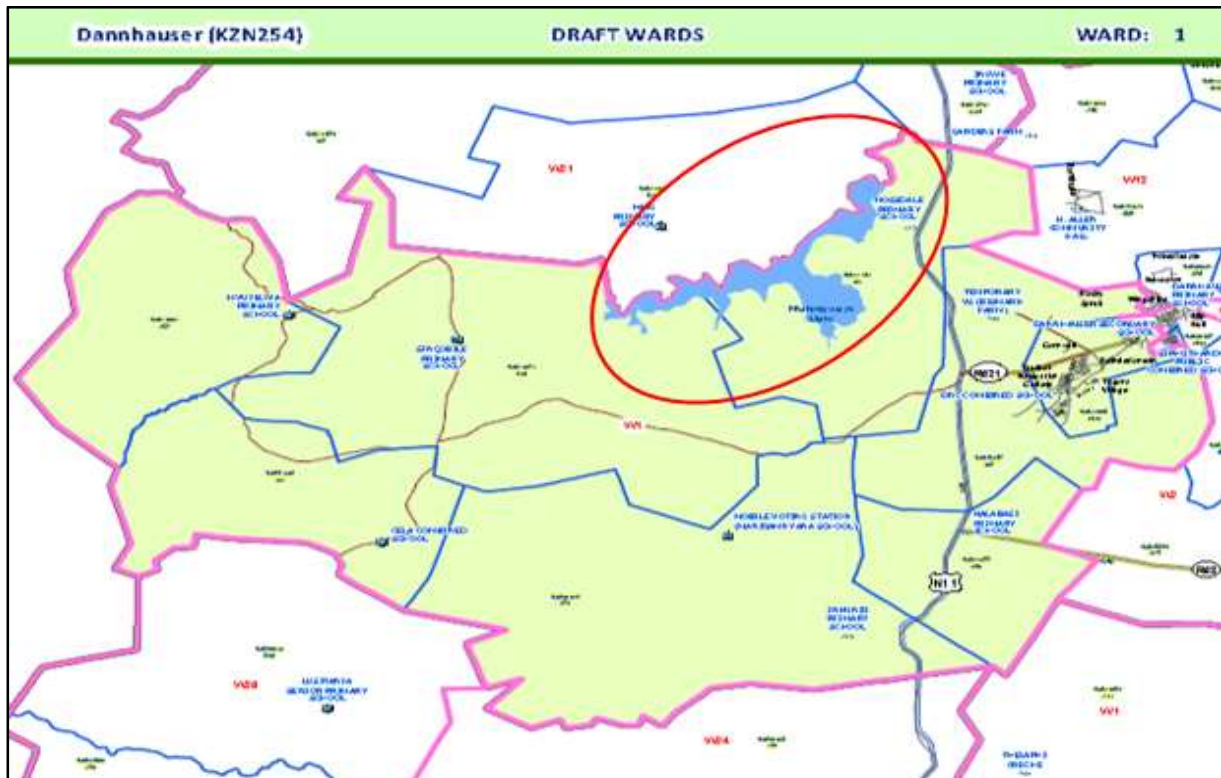


Figure 5: Dannhauser Local Municipality Ward 1 Delimitation (2016)

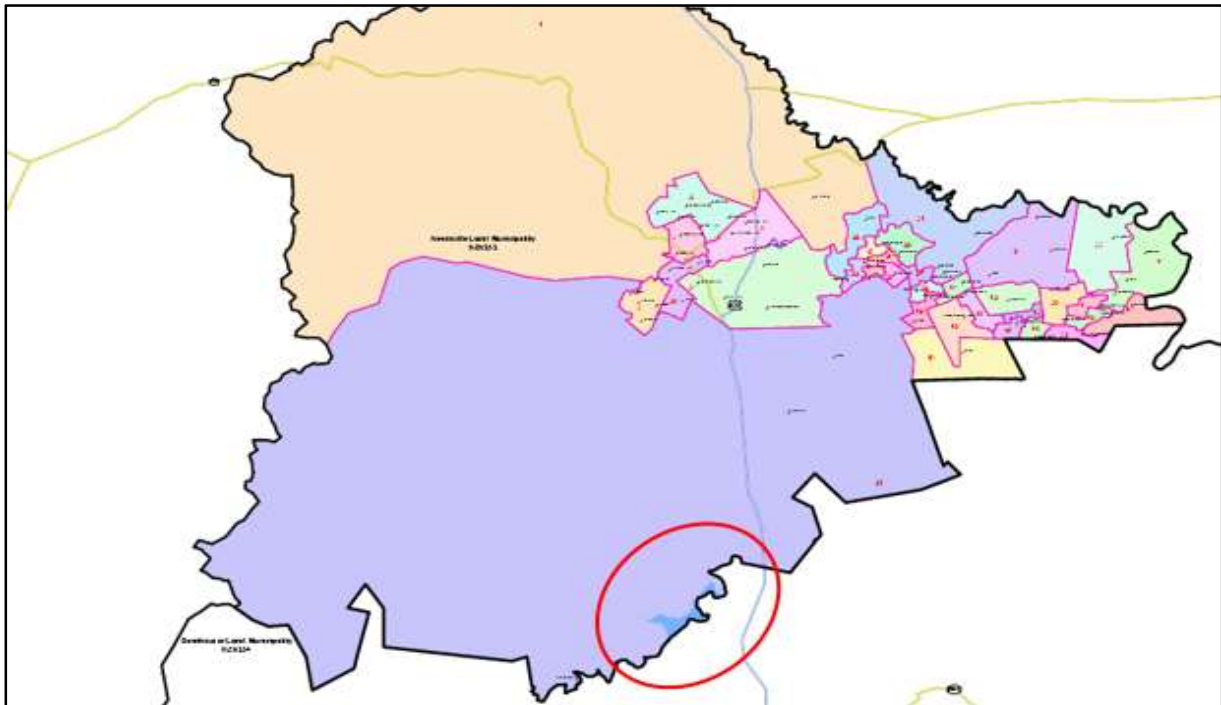


Figure 6: Newcastle Local Municipality Ward 21 Delimitation (2016)

Population size

Ward 1 consist of 7 291 individuals representing 7% of the DLM total population, whereas Ward 21 has a total of 11 291 individuals representing 3% of the NLM total population, refer to **Figure 7** and **Figure 8**.

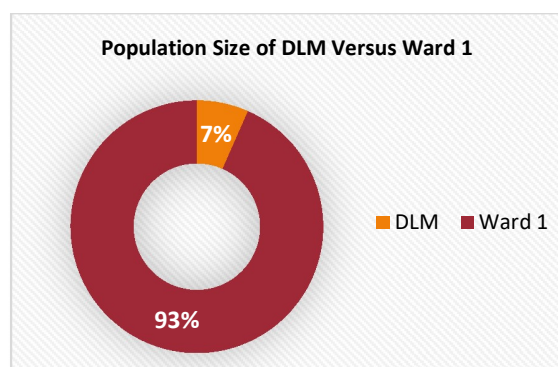


Figure 7: Population size of Ward 1 of DLM

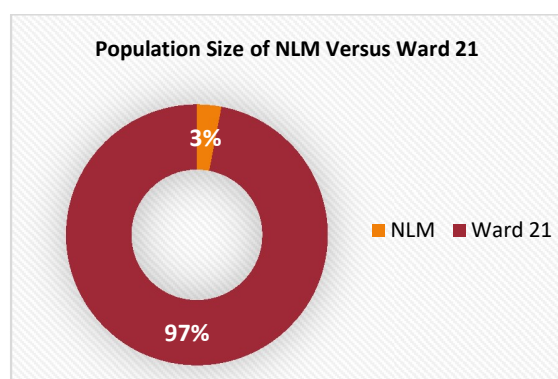


Figure 8: Population size of Ward 21 of NLM

Educational Level

As illustrated in **Table 5** and **Figure 9**, 2 503 individuals representing 13% of population in both Wards have matric, however only 784 individuals representing 4% of the population in both wards have moved beyond schooling to receive some kind of higher education.

Table 5: Education Level of Ward 1 (DLM) and Ward 21 (NLM)

Description	Ward 1	Ward 21
Primary Level	2 752	2 915
Secondary Level	1 930	3 484
Certificate with Grade 12 (Matric)	876	1 627
Higher Educational Level	135	649
No Schooling	1 596	2 616

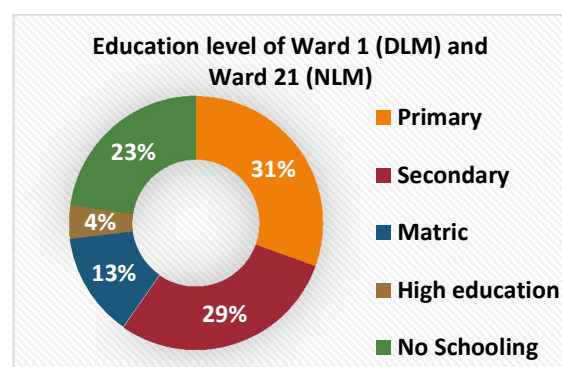


Figure 9: Education Level of Ward 1 (DLM) and Ward 21 (NLM)

Employment status

In terms of employment levels within ward 1 under DLM and ward 21 (NLM), majority of residents are employed and only 978 individuals representing 5% of population in both wards are unemployed. However, 723 individuals representing 4% of population are discouraged work-seekers suggesting that they no longer seek to become employed (Census, 2011). Refer to **Table 6** and **Figure 10**.

Table 6: Employment Status of Ward 1 (DLM) and Ward 21 (NLM)

Description	Ward 1	Ward 21
Employed	1 425	2 879
Unemployment	228	750
Discouraged work-seekers	348	375
Other not Economically active	2 288	3 584
Not applicable	3 002	3 702

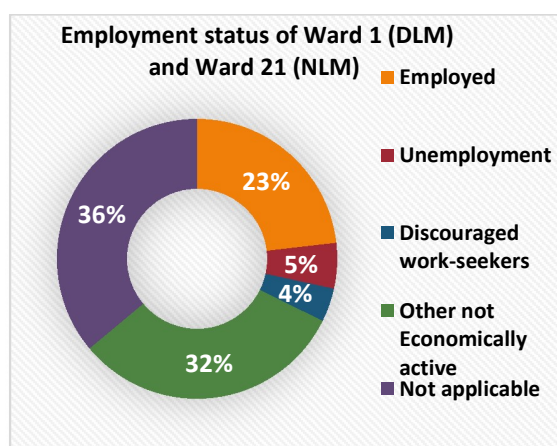


Figure 10: Employment Status of Ward 1 (DLM) and Ward 21 (NLM)

Monthly Income

Ward 1 of DLM has 3 293 individuals representing 45% of the population without a source of income, whereas Ward 21 of NLM has 4 328 individuals representing 38% without a source of income (refer to **Figure 11**). The situation requires rigorous and integrated efforts by the municipalities to create decent work and sustainable livelihoods for the people.

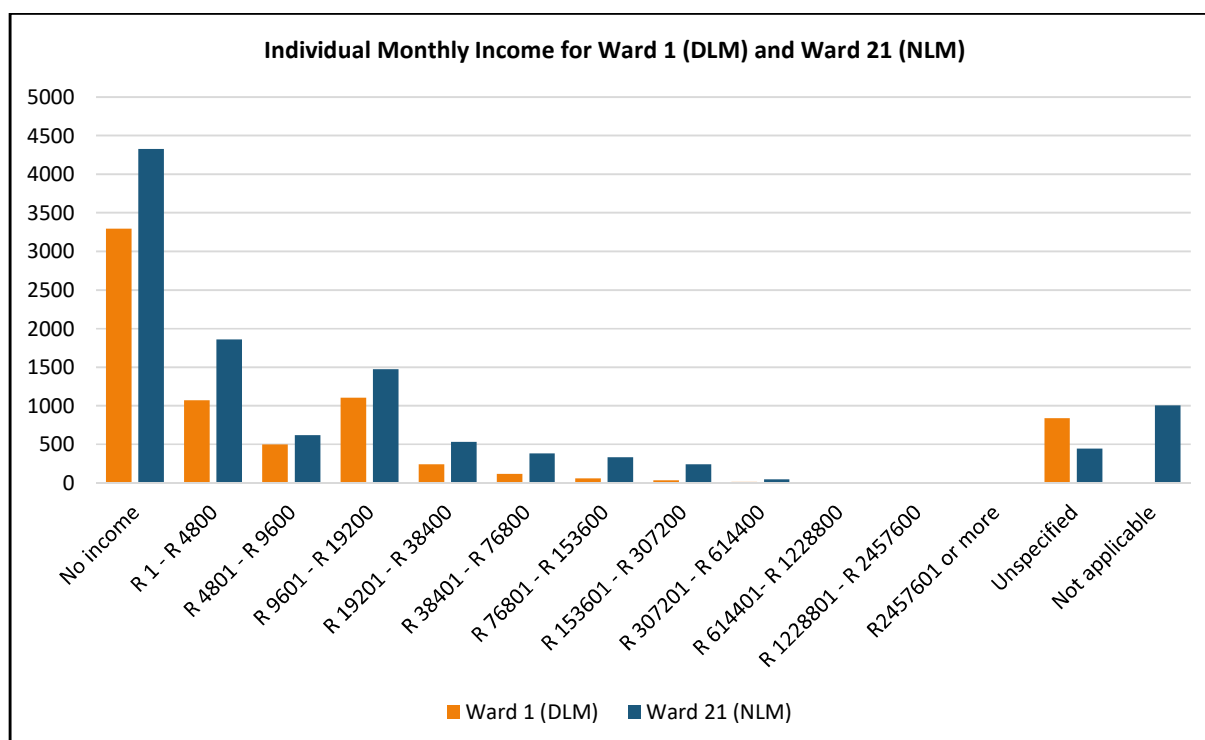


Figure 11: Individual Monthly Income for Ward 1 (DLM) and Ward 21 (NLM)

2.3.1 Community Beneficiation

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

According to DWAF (2006), it is important to ensure that communities have physical access to the resource, as well as access to the water-based recreation economy. This will ensure that water resource remain protected for 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 entrepreneurship and participation in the fishing linked tourism service sector.

In addition, subsistence fishing is widely practiced by rural community members to sustain their livelihoods. Appropriate policies to promote greater participation by rural community members in the recreational angling value chain have the potential to create opportunities such as food security in rural areas. In terms of the 1ST Draft of the National Inland Fisheries Policy Framework for South Africa. (DAFF, 2018), more can be done to ensure that this economic sector contributes to

transformation and equitable socio-economic benefit from inland fish resources

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

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

planning for using water for recreational purposes.

Process triggers were used to initiate the planning and public participation process in which stakeholder and potential Interested and Affected Parties (I&AP) were given an opportunity to comment or raise issues of concern that are relevant and potential challenges presented in **Table 7**.

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

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

Trigger(s)	Potential Challenges
Resource Management	<ul style="list-style-type: none"> Ntshingwayo Dam is infested with alien invasive plant species such as Silver wattle (<i>Acacia dealbata</i>), Long-leaved wattle (<i>Acacia longifolia</i>), Black wattle (<i>Acacia Mearnsii</i>), Eucalyptus spp (<i>Eucalyptus spp</i>) and Bramble (<i>Rubus cuneifolius</i>). These alien invasive plants species can outcompete indigenous plants species, thereby reducing the biological diversity around the dam. The dam is located within a protected area (Chelmsford Nature Reserve) with abundant red data species. The area is protected in terms of the National Environmental Management: Protected Area Act, 2003 (Act No. 57 of 2003).
Recreational Industry Involvement	<ul style="list-style-type: none"> The Dam is located in a remote area where public transport there is limited. The access point at the Dam is located a far from the local communities.
Community participation and beneficiation	<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. There is a lack of community awareness regarding environmental and tourism education.
Public Policy	<ul style="list-style-type: none"> Ntshingwayo Dam has been identified as an area with tourism potential in the Newcastle Local Municipality (NLM) development programmes: <ul style="list-style-type: none"> Council Resolution report (2012); Tourism Development Plan (2013); and Visitor's guide.

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 12**.

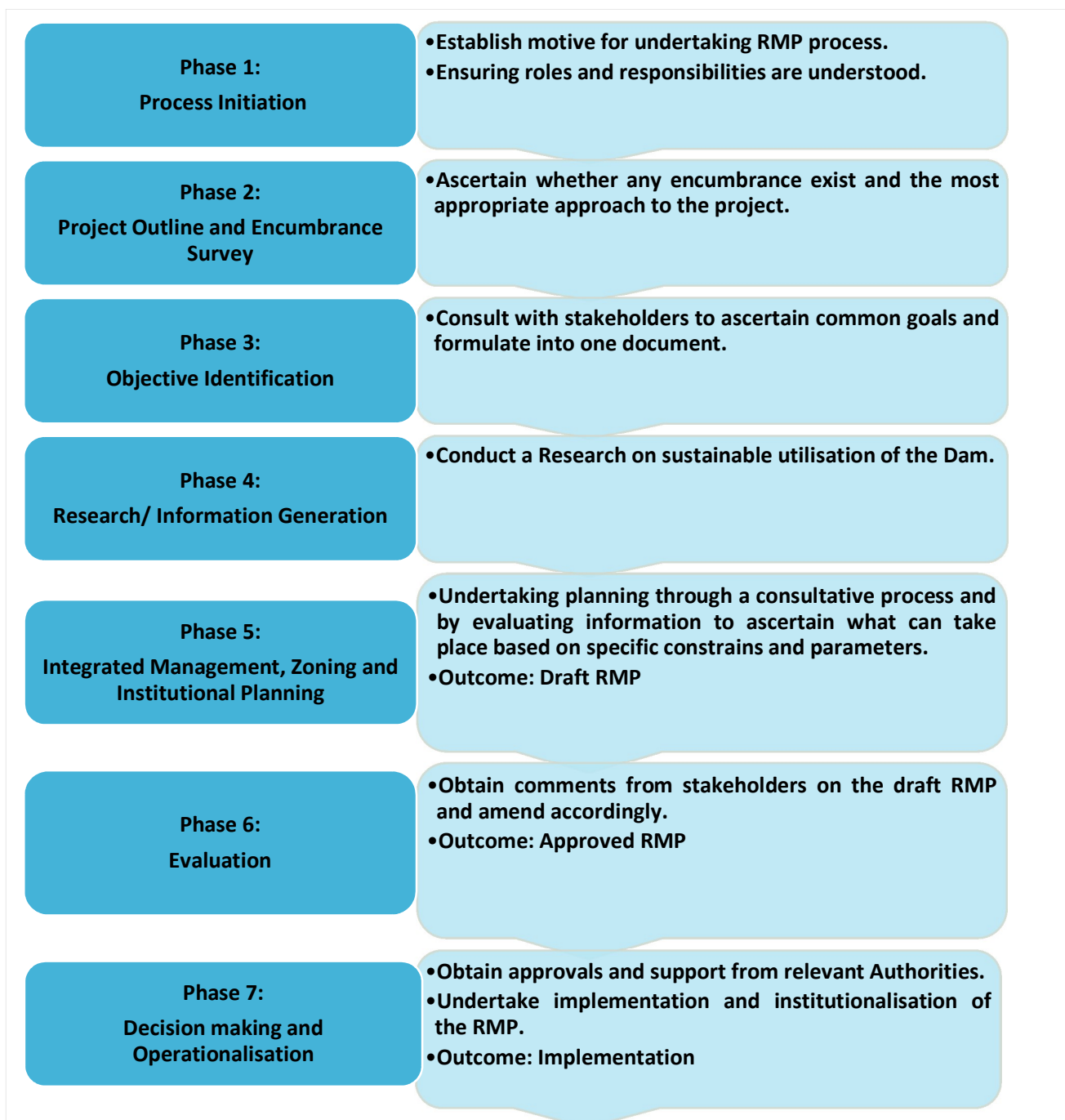


Figure 12: RMP Procedure

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, such as the review of legislative and regulatory framework, decision-support tools, specialist reports and studies, policies and guidelines district and local municipal plans, biodiversity sector plans and water information systems.

3.4.2 Site Inspection

A site inspection was conducted with the DWS officials (DWS IEE and Dam Control Officer) on 04 May 2016.

During the site inspection the following were observed: alien invasive plants species, red data species (i.e. Oribi antelope), endemic mammal species (i.e. Black wildebeest, Springbok), game (such as zebra), recreational clubs and picnic areas. 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 process (PPP) is a process in which potential Interested and Affected Parties (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 PPP, as stipulated in the Guideline for Public Participation (DWAF, 2001) are:

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

The PPP 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 in order 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&AP.

The following advertising methods were used:

- **Newspaper Advert:** Initial public meetings were advertised in the Newcastle Advertiser in English on 04 August 2017 and the advert for the draft RMP was advertised in the Ladysmith Gazette on 16 March 2017 (refer to **Appendix B**).
- **Flyers and On-site Notices:** Flyers and on-site notices were compiled in English and IsiZulu and distributed on 04 August 2017. Flyers for the draft RMP presentation were distributed on 09 March 2018 (Refer to **Appendix C**).

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 04 August 2017, notifying them about the scheduled consultative meetings to be held. The draft RMP presentation was sent on 08 March 2018 (refer to **Appendix D**).
- **Background Information Document (BID):** The BID was sent to stakeholders via email with background information

about the proposed RMP project (refer to **Appendix E**).

- **Authority Meeting:** The initial authority meeting was held on 25 August 2017 at the Newcastle Local Municipality (Development Planning & Human Settlement Boardroom) and the draft RMP was presented on 23 March 2018. The purpose of the meeting was:
 - To present the RMP, 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:** An initial public meeting was held on 26 August 2017 at Haig Primary School (Ward 1) and Exmoor Farm (Ward 21). On 27 August 2017 an initial public meeting was held at Singobile Primary School (Ward 1) and Mosdale Farm Epompini (Ward 21).
- **The draft RMP was presented on 24 March 2018 at Mossdale Community.**
- **Comments and Responses Register:** A copy of the draft RMP report was circulated on 08 March 2018 for commenting. The commenting period lapsed on 30 March 2018. The comments received were documented in the Comments and Responses Register (refer to **Appendix F**).

3.4.4 Planning Partners

As an integrated planning procedure, 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 the RMP, which will serve as guide for the development and management of the water resource for recreational use.

In order to successfully complete the RMP, it is essential that the information obtained in the previous phases is utilised as planning input.

The RMP provides for coordination between different government departments and agencies as shown in **Table 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.

NTSHINGWAYO DAM RESOURCE MANAGEMENT PLAN

Table 8: Planning Partners for the Ntshingwayo Dam RMP

Department	Functions / Objectives
Dannhauser Local Municipality (DLM)	A portion of the Dam is located within the DLM,
Newcastle Local Municipality (NLM)	A portion of the Dam is located within the NLM of which the Ntshingwayo Dam and the Chelmsford Nature Reserve have been identified as an area with tourism potential.
Amajuba District Municipality (ADM)	The Dam is within the jurisdiction of the ADM.
Department of Agriculture, Forestry and Fisheries (DAFF)	The purpose of the DAFF includes sustainable development and management of resources to maximise the economic potential of the fisheries sector while protecting the integrity and quality of the country's aquatic ecosystems. Operation Phakisa's expansion to inland Dams is one of the 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.
Department of Environmental Affairs (DEA)	The DEA is mandated to give effect to the right of citizens to an environment that is not harmful to their health or wellbeing, and to have the environment protected for the benefit of present and future generations. In relation to the RMP, the DEA is responsible for biodiversity management within the GWWs, including invasive alien species. In addition, the Department should ensure that Environmental Impact Assessments (EIAs) is undertaken for all activities that triggers EIA Regulations. The DEA through the WfW programme, can assist in eradicating alien invasive plants species (blue gums and parrot furthers) and alien invasive fish species.
Department of Public Works (DPW)	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 watercourse. For the purpose of Inland Watercourse, DoT has established an agency called the South African Maritime Safety Authority (SAMSA), which is mandated to ensure safety of life and property at sea; to prevent and combat pollution from ships in the marine environment; and to promote the Republic's maritime interests.
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.

NTSHINGWAYO DAM RESOURCE MANAGEMENT PLAN

Department	Functions / Objectives
Cooperative Inland Watercourse Safety Programme (CIWSP)	<p>The CIWSP is the programme under DWS and is supporting a multi-departmental working group that is developing an innovative approach to inland water and safety integrity. The project, was initiated out of the need to find an innovative, practical and cost-effective way to implement SAMSA' Vessel Safety Regulations on inland watercourse 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 encumbrances exist within and around the Dam, including other factors that may influence the development and implementation of the RMP.

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

The identified encumbrances are categorized into Biophysical, Legal and Socio-cultural.

Tables 9 summarises the identified biophysical, legal and social-cultural encumbrances, that might affect the implementation of the RMP at the Dam.

Table 9: Summary of Biophysical Legal Encumbrances and Socio-cultural Encumbrances

Item	Description
Climate	<ul style="list-style-type: none"> The area experiences high rainfall during summer season which is the best time for touring and participating in recreational activities. This will affect some of the recreational activities such as camping, picnicking, etc.
Flora	<ul style="list-style-type: none"> The dominant grasses make the area to be prone to fire, as the grass is highly flammable throughout the year. The further spread of terrestrial alien invasive plant species can have a detrimental effect on the ecology of the Dam and can outcompete indigenous plant species as well as hinder proposed recreational activities such as boating and game viewing.
Fauna	<ul style="list-style-type: none"> The presence of red data species within the reserve makes the area sensitive to major developments.
Agreements	<ul style="list-style-type: none"> The Dam is situated in an area that is governed by two (2) main acts (NWA and NEMPAA), as such it is important to have a well packaged Memorandum of Agreement (MOA) between DWS and EKZNW which will assist in defining and clarifying functions regarding the management of the Dam for recreational purposes. The informal agreements might affect the implementation of the RMP, as the objectives of the fishing and boating clubs might not be aligned with the objective of the RMP. As such it is important for all Recreational Clubs to enter into formal agreement with EKZNW, in order to ensure that the agreements are aligned with the objectives of the RMP.
Mobility	<ul style="list-style-type: none"> There is a long distance between the access point and the local communities, which makes it difficult for nearby communities to access the Dam. The community is requesting an alternative access point to accommodate them. The Dam is located in a remote area where public transport is limited.
Expectations	<ul style="list-style-type: none"> Failure of DWS, EKZNW and DLM to meet the community expectations might discourage the community to participate in the implementation of the RMP.
Social Audit	<ul style="list-style-type: none"> Only 4% of the population in both Wards have furthered their studies up to higher education level. The implication is that majority of residents in the aforementioned Wards will not have received any kind of training to become active participants in the tourism sector. The discouraged work seekers may not show the necessary interest and level of community participation for the implementation of the RMP.

3.5.2 SWOT Analysis and Objective Identification (Phase 3)

Engineerex Pty Ltd as the process facilitator conducted the Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis to determine the **Strengths** and **Opportunities** that

define the potential of the Dam whereas the challenges regarding the Dam were identified through **Weaknesses** and **Threats**. Refer to **Table 10** for the SWOT analysis.

Table 10: SWOT Analysis for Ntshingwayo Dam

Strengths	Weaknesses
<ul style="list-style-type: none"> The Ntshingwayo Dam is situated within a protected area. The Dam has been featured in the municipal development programmes: <ul style="list-style-type: none"> It has been recognised as a catalyst for tourism in the 2012 Council Resolution Report; The Dam has been identified as a tourism development potential in the Municipal Tourism Development Plan (TDP, 2013); The Ntshingwayo Dam has been included in the NLM visitor's guide; and The Dam has been used as a location for filming short stories e.g ekasi stories. The Dam has wildlife diversity, which attract more tourists. The Dam can withstand drought. The Dam has enough space to host events such as jazz festivals. 	<ul style="list-style-type: none"> The Dam is currently underutilized for tourism purposes. The current tourism structures i.e. chalets are not in good condition (they discourage users to stay overnight) Lack of facilities such as ATMs, food stalls, etc. Poor signage for day visitors. It is located in a remote area, there is no public transport for people without private transport. Lack of environmental and tourism educational awareness for the community. No scheduled recreational activities. Lack of coordinated state effort for economic potential yield. Lack of water supply to the nearby community discourages the community to engage in tourism activities. Angling competitions are not marketed and notices are not given to the local communities prior to any event hosted at the Dam. EKZNW makes accessing the Dam difficult for the local community due to high access fees charged. The access fees are unaffordable to the locals. There must be access fees for local communities and tourists. Lack of marketing. The community is not aware of recreational activities at the Dam. There is no transparency in informing the communities about using the Dam for recreational activities. There is a long distance between the access point and the communities, which makes it difficult for nearby communities to access the Dam.
Opportunities	Threats
<ul style="list-style-type: none"> The Dam can provide job opportunities through recreational activities (i.e. selling of cultural artefacts) and removal of alien invasive plant species. Eco-tourism potential. There is an opportunity for new low impact tourism developments (i.e chalets). The Dam has a good area for camping sites. The Dam has enough space to host events (i.e weddings, jazz and dragon festivals). The Dam can be used as an environmental tour destination for local schools. The Dam can also have influence on career options. 	<ul style="list-style-type: none"> Pollution threats from nearby mines. Alien plants species can have a detrimental effect on the ecology of the Dam and the natural aesthetic of the area in general. The Dam is not being prioritised by the management for tourism development. Hesitation of EKZNW in giving support to tourism developments. The community is not involved in the management and utilisation of the Dam. Drowning incidents, due to lack of swimming and boating skills.

<ul style="list-style-type: none"> • There are opportunities for hosting angling competitions. • Small scale fishery is an opportunity that can be available for young people within the community. • The community has an interest of learning about aquaculture within the Dam site. • There is training opportunity for swimming, fishing and boating. • To extend the nature reserve in order to accommodate other proposed recreational developments. 	
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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.

Objective Identification (Phase 3)

The set of key objectives acknowledged were categorised into three (3) Key Performance Areas (KPAs) as follow:

KPA 1: Resource Management

- To have Ntshingwayo Dam free of alien invasive vegetation in order to support the proposed recreational activities and to maintain the indigenous ecological aspect of the area; and
- To conserve the natural environment in and around the Dam as well as to protect the fauna species within the reserve.

KPA 2: Resource Utilisation

- To have alternative access points to the Dam in order to accommodate local communities;
- To promote sustainable subsistence fishing at the Dam; and
- To provide suitable recreational infrastructures that will effectively support the identified activities in an

aesthetically pleasing, functional, safe and environmentally sound manner.

KPA 3: Benefit Flow Management

- To uplift the local economy and increase benefit flows to the surrounding communities through community empowerment; and
- To establish an effective institutional structure that can manage recreational use of the Dam in an acceptable manner, which is also representative of all the Stakeholders.

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 locally and internationally recognised green tourism destination of choice with upmarket accommodation that has minimal negative impact, allowing for environmental and tourism educational tours while creating a market that promotes community participation and beneficiation”.

3.5.3 Research/ Information Generation (Phase 4)

The main aim of the research was to identify the Dam tourism development potential and to evaluate the practicality/ feasibility of the identified objectives.

Tourism Development Potential:

Ntshingwayo Dam is the third largest Dam in KwaZulu-Natal and offers a tranquil stretch of water suitable for all water sports². The Dam is an excellent venue for different recreational activities such as angling, bird watching and game viewing, camping, boating, sailing, water skiing, swimming, etc.

According to EKZNW, the Dam falls within a protected area (CNR) which offers game viewing opportunities as there are large herds of springbok, blesbok, red hartebeeste and Oribi. It further indicates that the reserve also offers regular hunting opportunities with both meat and trophy packages being offered on tender annually.

The IA should assist in determining recreational activities and events that are compatible with the area taking into account the sensitivity of the nature reserve. Aspects to take cognisance of include:

- Newcastle Local Municipality (NLM) has identified Ntshingwayo Dam as a potential tourism hub;
- Eco-tourism and green developments should mainly be allowed within the Dam and nature reserve. This is to ensure that the area does not lose its character;
- Development proposals should be screened to determine if any development activities are applicable for undertaking Environmental Impact Assessments (EIAs), Water Use License Applications (WULAs) and/or permit applications; and
- Permanent structures within the purchase boundary are not allowed. All developments should be outside the 1:100 year floodline.

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, 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.

² <http://www.kznwildlife.com/dams/130-dam/422-chelmsford-ntshingwayo-dam-and-ncandu.html>

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 13** shows the plans and their components.

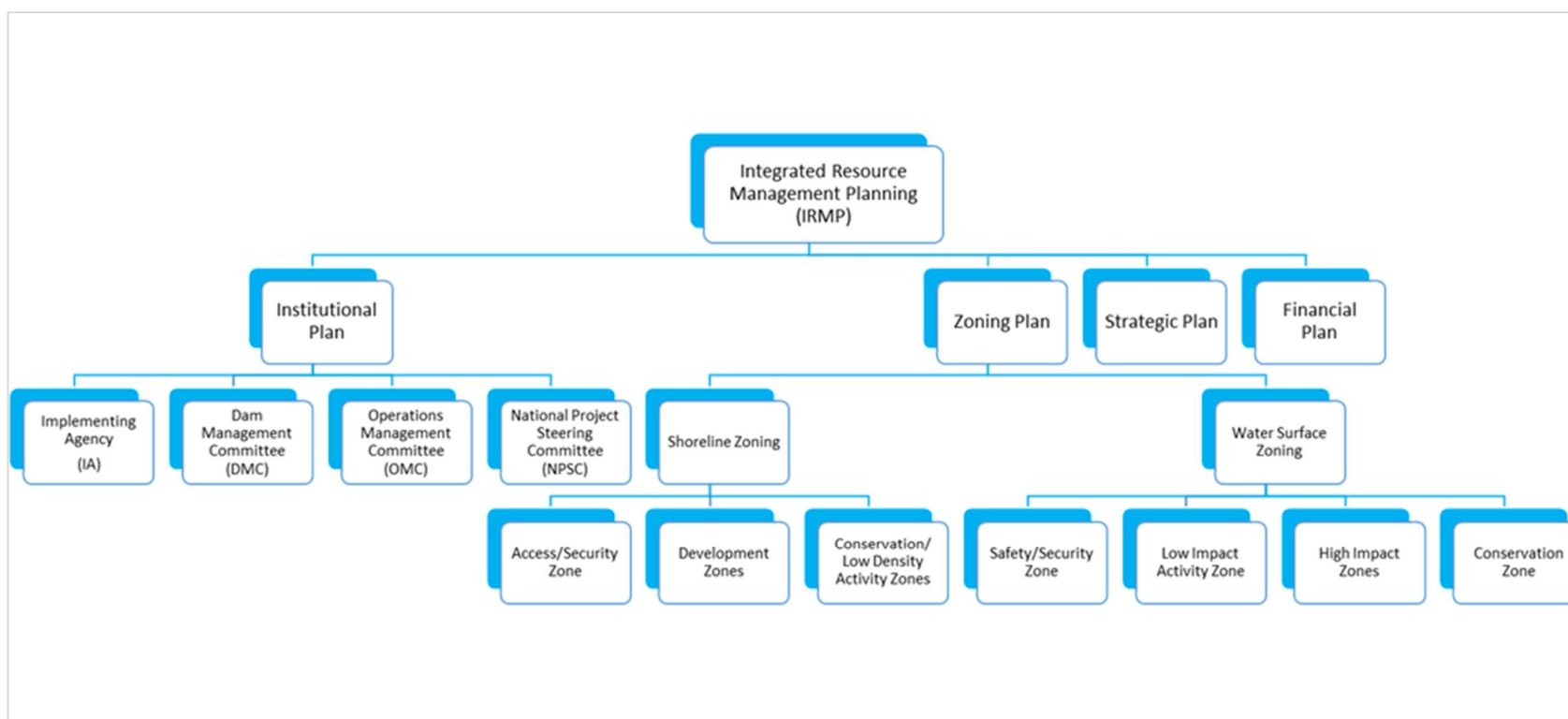


Figure 13: Integrated Resource Management Planning

4.1 INSTITUTIONAL PLAN

The Institutional Plan provides a framework for the institutional arrangements at the Dam. The proposed management systems include four (4) committees namely:

- Implementing Agency (IA);
- Dam Management Committee (DMC);
- Operations Management Committee (OMC); and
- National Project Steering Committee (NPSC).

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

4.1.1 Implementing Agency (IA)

The Implementing Agency (IA) is an institution that implements a programme or project on behalf of DWS.

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

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

The IA shall facilitate the implementation of programmes or action projects identified in the RMP. The IA and DWS will sign a Memorandum of Agreement (MOA), which is a legal binding document that outlines the roles and responsibilities and conditions to be followed by both parties when entering into agreement(s) and/or when in terms of managing the Dam/ water resource 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;
- Management of incident management system and wash bays;
- Management of community skills and training programmes;
- Management of commercial activities (in line with Treasury Requirements); and
- Management of AtoN and demarcation markers.

4.1.2 Dam Management Committee (DMC)

The DMC comprises of user groups representatives that are interested or affected by the Dam and will assist in raising and addressing issues relating to the Dam. Any unresolved issues relating to the Dam are escalated to OMC (described in detailed in 4.1.3). The DMC is required to meet quarterly.

The functions of the DMC include the following, amongst others:

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

Figure 14 shows the proposed parties to form part of the DMC for Ntshingwayo Dam

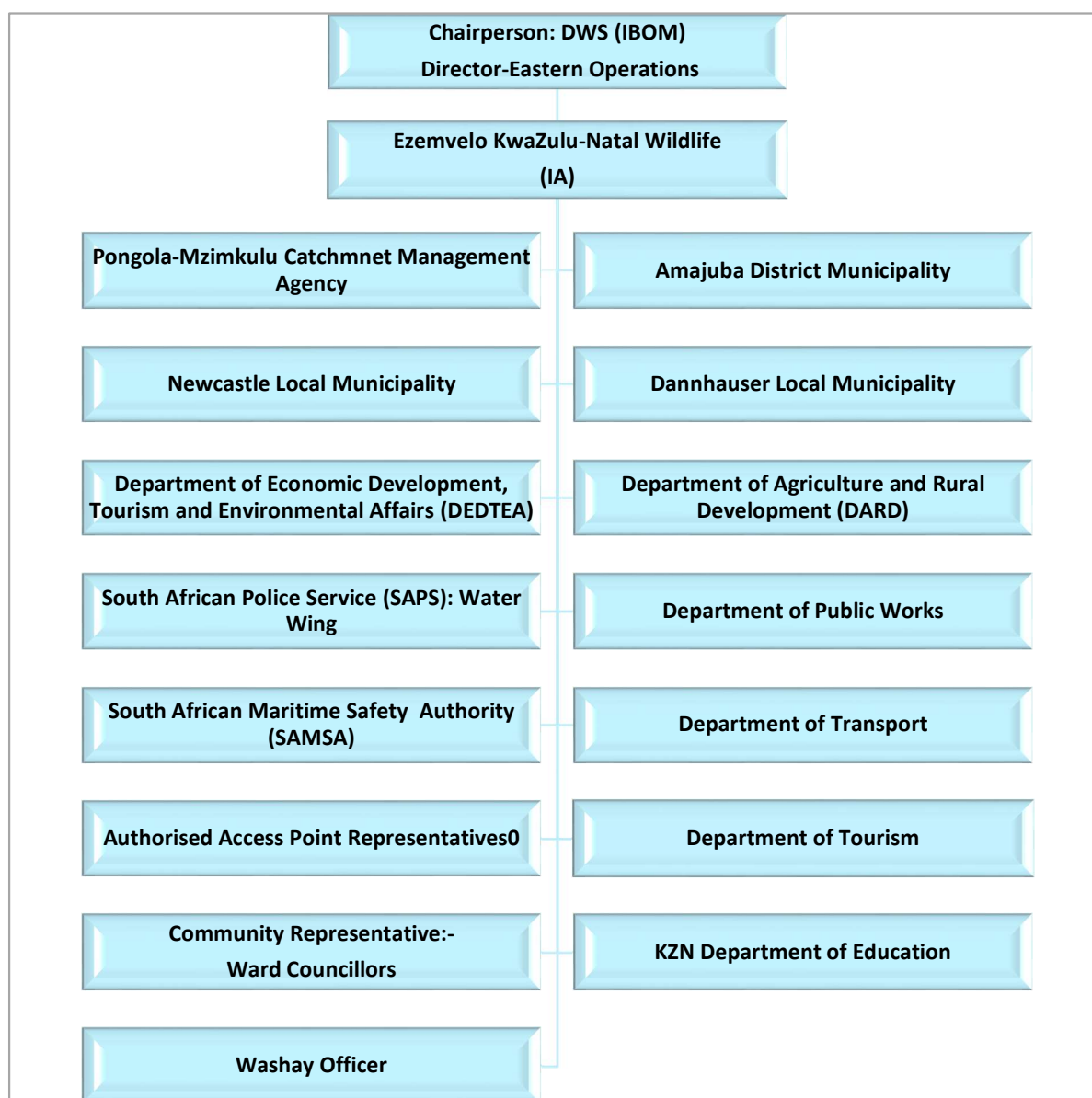


Figure 14: Proposed DMC

Management Tools:

The DMC will have 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) defines 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 the control of aquatic invasive species;
- Management of development pressure;
- Management of incident management system and wash bays; and
- Management of AtoN and demarcation markers.

4.1.3 Agreements and Permits

The purpose of agreements is to ensure proper use of the Dam in line with the RMP requirements and the relevant acts and regulations. The applicable agreements for the implementation of RMP are as follows:

Memorandum of Agreement (MOA)³:

MOA is a legally binding document that outlines the roles, responsibilities and conditions to be followed for the management of the water resource for recreational use. A 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 unless a 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 Inland Waterways 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

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

- Access points to be used.

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

National Affiliations:

All recreational clubs (i.e canoeing and fishing) must be affiliated to a South African Sports Confederation and Olympic Committee (SASCOC) affiliated organisation.

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 15**.

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**).

4.1.4 Operations Management Committee (OMC)

There is an existing Chief Directorate: Infrastructure Operations Management



Figure 15: 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 16** shows government departments (also referred to as planning partners and/ or authorities) and agencies that will form part of the NPSC:



Figure 16: 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, whilst not retarding the primary functions of the Dam. This RMP and/ or zonation plan does not legitimise nor does it authorise any existing built structures, infrastructure or services within the Government Water Work (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. This 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 habitats at the inlet(s) of the

Dam. Access to these areas are 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
- These areas are used by aquatic birds, amphibians 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, such as wind surfing, kayaking, swimming, rowing, sailing, paddle boating, float tubes, canoeing, angling, yachting, aquaculture⁴ and small-scale fisheries.

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 11 and **Figure 17** shows the proposed water surface zoning for Ntshingwayo Dam.

⁴ The final location of the aquaculture will dependent on the outcome of a feasibility study.

NTSHINGWAYO DAM RESOURCE MANAGEMENT PLAN

Table 11: Proposed Water Surface Zoning Description

Zone Name	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 Zones 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Public activities (to prevent aquatic habitat disturbance) 	<ul style="list-style-type: none"> • Area should be demarcated by demarcation makers and AtoN. • Strict management and control of these areas, especially concerning illegal fishing and dumping.
<ul style="list-style-type: none"> • Low Impact Activity Zone 	<ul style="list-style-type: none"> • Angling • Rowing • Paddle boating • Float tubes • Canoeing • Sailing • Swimming 	<ul style="list-style-type: none"> • Motorised boating • Water Skiing 	<ul style="list-style-type: none"> • Area should be demarcated by demarcation makers and AtoN. • No private slipways/ floating jetties to be built without approval from DWS. • Launching and mooring of vessels should take place at this zone. • Motorised boating are allowed to launch at this zone but no water wake should be formed until the designated area for motorised recreational boating is reached.
<ul style="list-style-type: none"> • High Impact Activity Zone 	<ul style="list-style-type: none"> • Motorised boating • Water Skiing 	<ul style="list-style-type: none"> • Angling • Rowing • Paddle boating • Float tubes • Canoeing • Sailing • Swimming 	<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 50m 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.

NTSHINGWAYO DAM RESOURCE MANAGEMENT PLAN

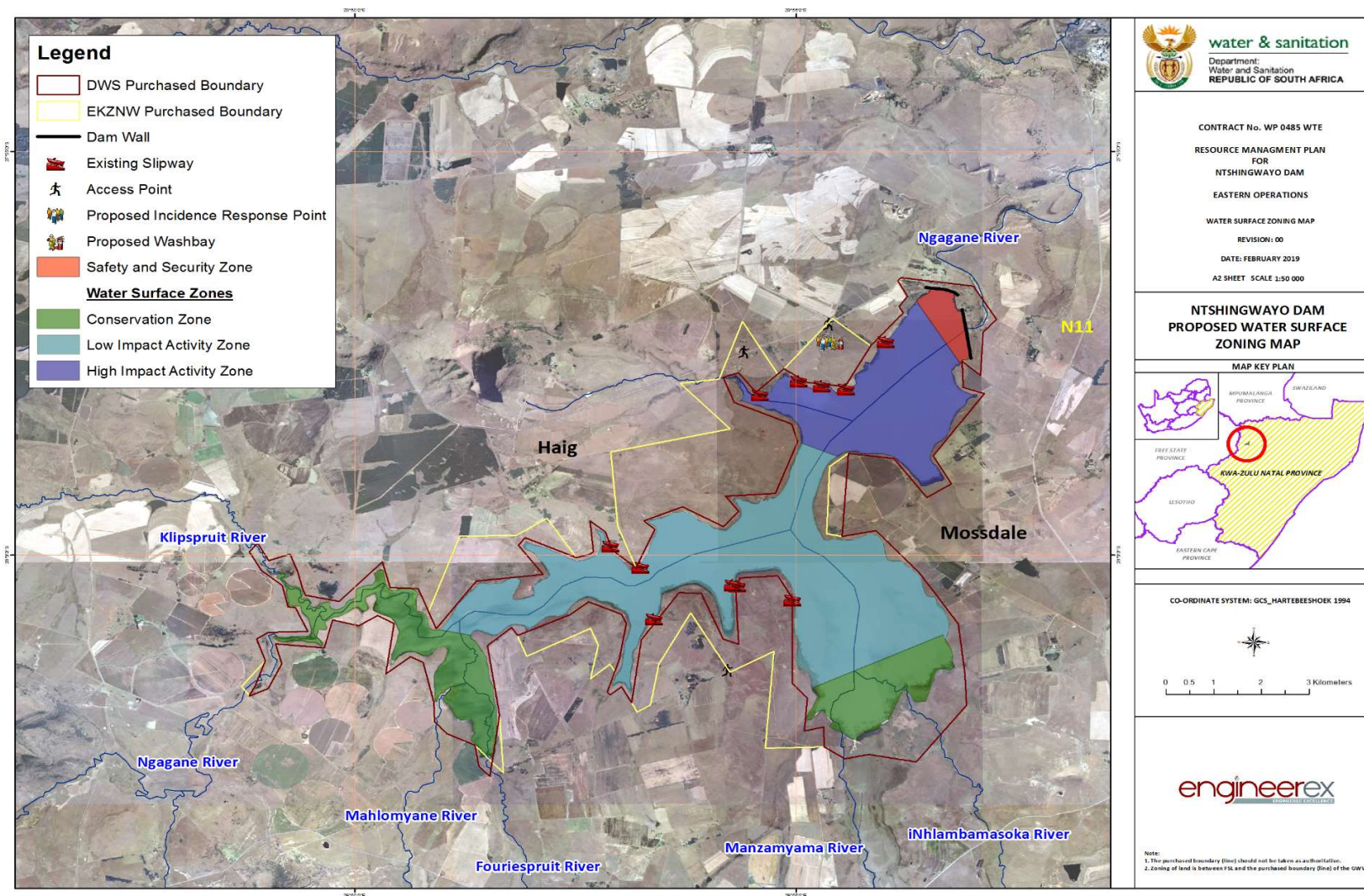


Figure 17: Proposed Water Surface Zoning

4.2.2 Shoreline Zoning⁵

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

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

This zone is applicable to the area surrounding the Dam wall and the outlet works. The extent of this zone is determined by the DWS and shall 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 these areas are limited to low impact activities such as hiking and bird watching. These areas are demarcated to prevent ecological degradation 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 include subsistence fishing, livestock watering points, and small-scale community gardens.

Table 12 and **Figure 19** shows the proposed shoreline zoning for Ntshingwayo Dam.

⁵ Permanent structures within the purchase boundary are not allowed. All developments should be outside the 1:100 year floodline.

Table 12: Proposed Shoreline Zoning Description

Zone Name	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"> • Unauthorised 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"> ○ Bird watching ○ Academic Research 	<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 conduct as per the relevant Legislations. • This zone should control access to ecological sensitive areas.
<ul style="list-style-type: none"> • Medium Density Activity Zone 	<ul style="list-style-type: none"> • Shoreline fishing • Day visitors • Picnic areas • Braai facilities • Camping site • Ablution facilities and infrastructure for services 	<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 PPP process in terms of the National Treasury. • Requirements of NWA and NEMA must be taken into account in all recreational activities. • All developments must be approved by DWS and IA. • No private slipways to be built without approval from DWS.
<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 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 DWS and IA. • No private slipways to be built without approval from DWS.

NTSHINGWAYO DAM RESOURCE MANAGEMENT PLAN

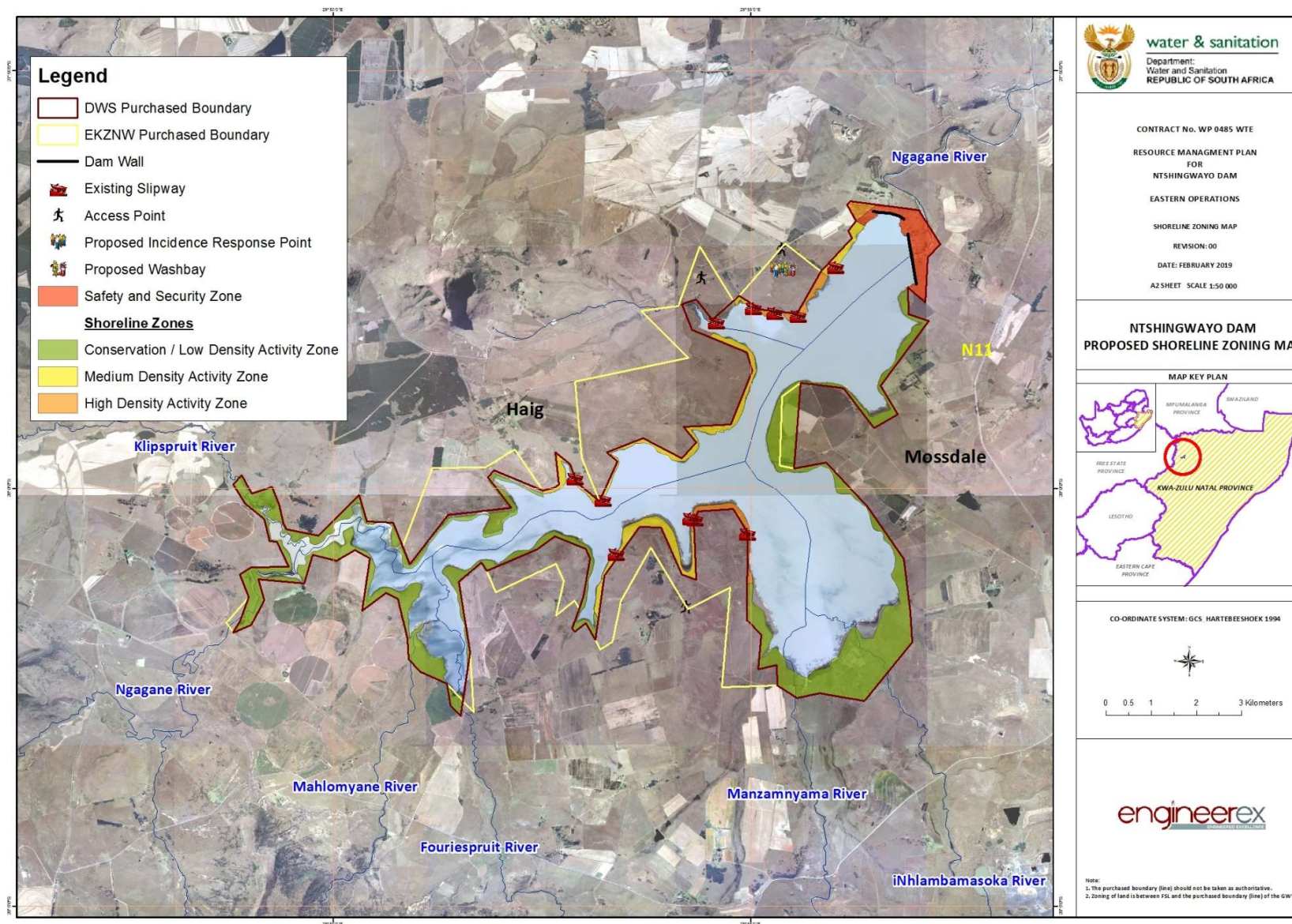


Figure 18: Proposed Shoreline Zoning Map

NTSHINGWAYO DAM RESOURCE MANAGEMENT PLAN

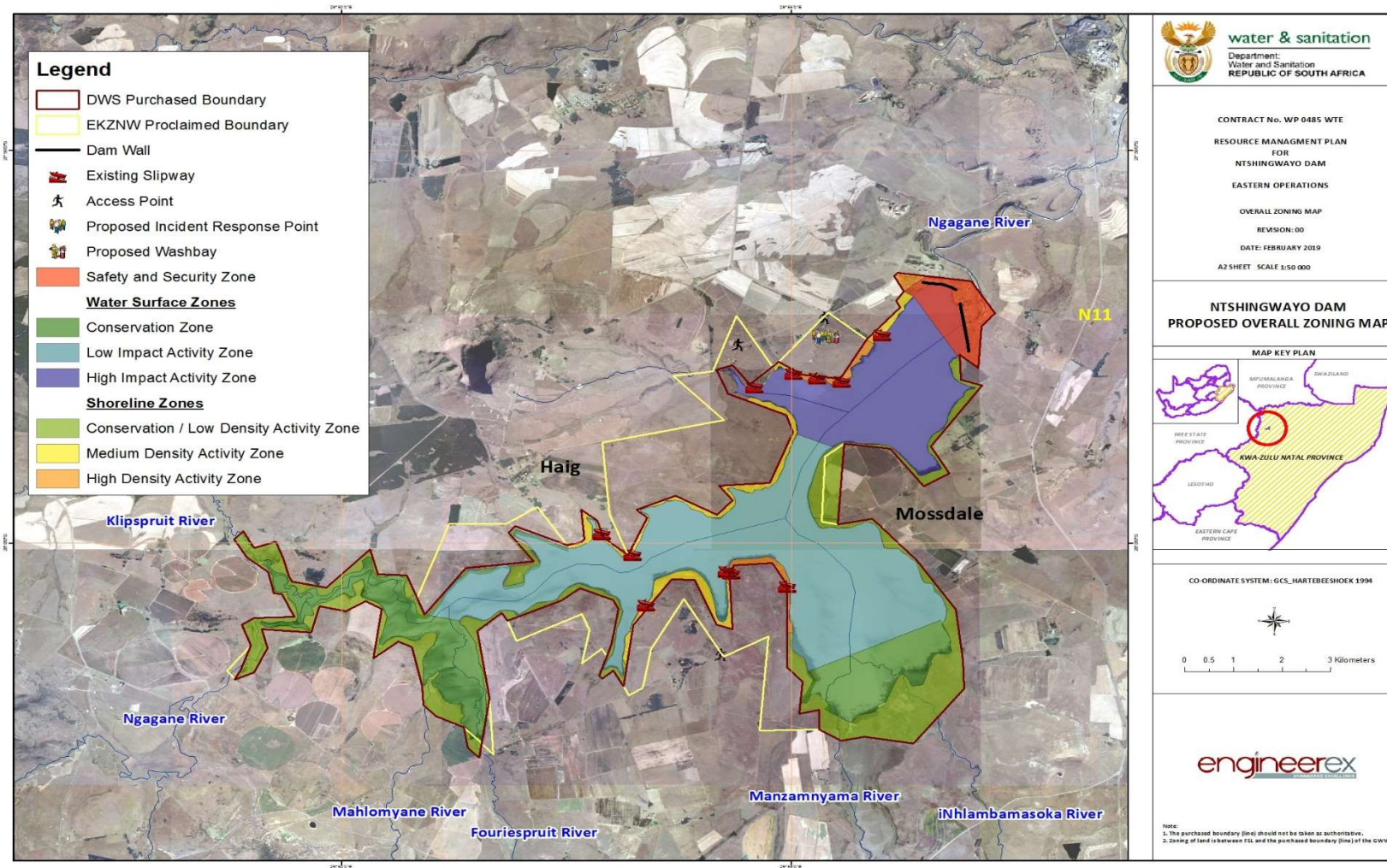


Figure 19: Proposed Overall Zoning Map

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 $RCC \geq ECC$** .

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)

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

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)
Angling	3.0
Canoe	1.0
Paddle boating	1.0
Float tubes	1.0
Rowing	0.5
Sailing	2.0
Water-Skiing	2.0
Powerboats	4.0
Average	1.8

Based on the **Table 13**, the average hectare per user is 1.8 ha (18 000 m²), the value of 3.0 ha (30 000 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 Ntshingwayo Dam is **3610 ha** whereas **U/a** is assumed to be the average which was calculated as 1 craft/3 ha. And again, the rotation factor (**Rf**) is assumed as 1 visit per day.

$$\begin{aligned}
 \text{Therefore: } PCC &= A \div U/a \times Rf \\
 &= 3610 \times 1/3 \times 1 \\
 &= 1\,203 \text{ crafts on the Dam}
 \end{aligned}$$

Real Carrying Capacity (RCC)

$$\text{RCC} = \text{PCC} \times (100 - \text{Cf1})\% \times (100 - \text{Cf2})\% \times (100 - \text{Cfn})\%$$

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 Ntshingwayo Dam, these factors include sensitive areas, such as conservation areas (489 ha) as well as aspects regarding the safe operation and management of the Dam (156 ha).

These factors account for 6445 ha that is 18 % of the area that is not available for recreational use.

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

$$= 1\,203 \times (100 - 18) \%$$

$$= 986 \text{ crafts}$$

Effective Carrying Capacity (ECC)

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

Given that there is no adequate recreational infrastructure facilities and no management capacity at the Dam, the ECC is currently 0. Once a proposed recreational Institutional Structure and infrastructure capacity is in place, the ECC

can be recalculated 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?)
- 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)
<u>Alien Plants Control:</u> <ul style="list-style-type: none"> To have Ntshingwayo Dam free of alien invasive vegetation in order to support the proposed recreational activities and to maintain the indigenous ecological aspect of the area. 	<ul style="list-style-type: none"> Ntshingwayo Dam is infested with alien invasive plants species such as Silver wattle, Long-leaved wattle, Black wattle, etc. The further spreading of these species can have a detrimental effect on the ecosystem of the Dam and they can outcompete indigenous plants species as well as hinder other proposed recreational activities such as game viewing. 	<ul style="list-style-type: none"> Remove all alien invasive vegetation within the purchased boundary and the surrounding adjacent area. Manual removal is more environmentally friendly and can also create jobs for people. Rehabilitate areas infested with invasive alien vegetation with suitable plants species indigenous to the CNR and surrounds. State poverty relief programs such as 'Landcare', 'Working for Water', "Working on Fire" and 'Working for Wetlands" should be used to full effect to complement the Nature Reserve budget for this management task. Develop an inspection and cleaning mechanism (Wash bay) to ensure that vessels entering the Dam do not bring with them alien vegetation. 	<ul style="list-style-type: none"> DEA [Working for Water (WfW) programmes] DAFF (Soil Management section) Expanded Public Works Programme (EPWP) South African Biodiversity Institute (SANBI) IA (EKZNW) with the support of the DMC
<u>Biodiversity Conservation:</u> <ul style="list-style-type: none"> To conserve the natural environment in and around the Dam as well as to protect the fauna species within the reserve. 	<ul style="list-style-type: none"> The Dam is located within a protected area (Chelmsford Nature Reserve) with abundant red data species. The area is protected in terms of the National Environmental Management: Protected Area Act, 2003 (Act No. 57 of 2003). For these reasons it is desirable to maintain and improve the ecological state and also to minimize, remediate and mitigate any adverse effects. 	<ul style="list-style-type: none"> All relevant environmental legislations must be complied with for sustainable use and management of the Dam. All developments should be properly planned, based on a proper and detailed survey, in order to avoid the disturbance of biodiversity. Important habitats (inlets and other conservation zones) need to be protected and managed to ensure their ecological functioning. Rare plant and animal species or those found to be increasingly rare must be adequately protected. Fauna species should be encouraged to move freely in and out of the Dam basin. 	<ul style="list-style-type: none"> IA (EKZNW) with the support of the DMC Department of Economic Development, Tourism and Environmental Affairs (KZNEDTEA) DWS 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>Subsistence Fishing:</u> <ul style="list-style-type: none"> To promote sustainable subsistence fishing at the Dam. 	<ul style="list-style-type: none"> Ntshingwayo Dam is rich in fish diversity which plays a major role in the ecological balance of the aquatic ecosystem and also serve as a food source for local subsistence fishermen. Subsistence fishing by the local community remains an active use of the Dam, however this must be regulated by relevant policy to avoid overfishing within 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 people on fishing methods that are safe and sustainable. Preserve the core habitats for nesting, resting, feeding and breeding of fish within the inlets, by demarcating areas for subsistence fishing. Management authority or DWS must develop communication signage in order to effectively inform different angling groups about the Dam fishing rules. Appoint safety officers that will monitor compliance of the Dam fishing rules. Generate the necessary infrastructure, such as banks to fish from in order to support the sustainable fishing. 	<ul style="list-style-type: none"> IA (EKZNW) with the support of the DMC EDTEA Department of Agriculture and Rural Development (DARD) Other relevant conservation NGOs within the Area must be involved DWS
<u>Recreational Infrastructures:</u> <ul style="list-style-type: none"> To provide suitable recreational infrastructure that will effectively support the identified activities in an aesthetically pleasing, functional, safe and environmentally sound manner. 	<ul style="list-style-type: none"> It was indicated that the current tourism structures i.e. chalets are not in good condition (they discourage users to stay overnight). There is lack of facilities such as ATMs, food stalls, etc. Furthermore, there is Poor signage for day visitors. 	<ul style="list-style-type: none"> Construction of recreational facilities: <ul style="list-style-type: none"> Outdoor and covered braai stands; Construction of lapas; and Non-permanent chalets and food stalls; etc. Provision of ATMs in the reserve. Should the design, development and operation of the public facility be outsourced, then contracts need to be obtained from local service providers. Implement a signage system that communicates relevant information, especially where this pertains to zoning restrictions and other rules and regulations. 	<ul style="list-style-type: none"> IA (EKZNW) with the support of the DMC DWS NLM DLM ADM

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)
<u>Community Participation and Beneficiation:</u> <ul style="list-style-type: none"> To uplift the local economy and increase benefit flow to the surrounding communities through community empowerment 	<ul style="list-style-type: none"> The Tourism sector has been identified as a vehicle for skills development and job creation. It is imperative that the local communities derive benefits from recreational activities conducted at the Dam. 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. 	<ul style="list-style-type: none"> Implement skills development programmes where opportunities exist. Provide swimming lessons to children in order to prevent drowning⁶. Involve the local communities in angling competitions. Implementation of environmental awareness programmes to the local communities and ensure that they are always updated with environmental information. Open the Dam for local schools environmental tour, as this can also have influence on career options. 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. First preference to be given to the local community members if any job opportunities become available. 	<ul style="list-style-type: none"> IA (EKZNW) with the support of the DMC Sector Education and Training Authority (SETA) KZN Department of Education (DoE) Swim SA DWS
<u>Recreational Institutional Structure:</u> <ul style="list-style-type: none"> To establish an effective institutional structure that can manage recreational use of the Dam in an acceptable manner, which is also representative of all the Stakeholders. 	<ul style="list-style-type: none"> The current EKZNW management structure is not representative of all stakeholders (i.e. community representatives). As such, a DMC will be established as part of the RMP process which is representative of all relevant stakeholders. 	<ul style="list-style-type: none"> By forming close working relationships with resource managers and private sector operators and contractors, benefits can emanate from the management and utilisation of the dam, allowing the DMC the opportunity to disseminate these benefits to neighbouring communities in an equitable manner based on sound Government policy supported by the relevant authorities. Put in place recreational institutional structure that is representative of all Stakeholders. The roles and responsibilities of the role players must be clearly defined and understood in the MOA which may be entered into between the Department of Water and Sanitation and the Implementing Agent. 	<ul style="list-style-type: none"> DWS IA (EKZNW)

⁶ Swim SA to be involved in all the DWS dams where drowning is a problem.

4.4 FINANCIAL PLAN

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

The proposed IA (EKZNW) 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 head, differentiated on age. 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 seeking or to make profit.

Over and above access fees, additional fees can also be charged which includes:

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

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

Rental Charges: Potential source of revenue can also be explored on rental fees, *inter alia*, boat clubs operating from the Dam should pay the leasing fees. The terms of payment will be

stipulated in the lease agreement between DWS through the IA (leaser) and the lessee.

4.4.2 Target Market

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

- Farmers;
- Churches;
- Schools;
- Institutions;
- Group tourists; and
- Government Departments.

In light of the above mentioned, there should be sources of capital for initial investment for the upgrading of existing infrastructure as well as setting up of new facilities. The proposed IA 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 are attached as **Appendix G**.

DWS and/or other relevant Government Departments can fund the IA to supplement operational costs and other scenarios by co-funding identified objectives that are related to their mandate. It is recommended that EKZNW 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 (One Stop Shop).

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

A more detailed Financial Plan (FP) is contained in the Business Plan (refer to **Appendix I**), which will facilitate the implementation of the RMP by providing an implementation program and cost estimates for all possible economic recreational activities.

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

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

CONCLUSION AND WAYFORWARD

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.

Key Challenges:

The following key challenges were identified for Ntshingwayo Dam:

- The Dam is located in a remote area, where there is little to no public transport;
- The Dam is infested with alien invasive plant species that can outcompete the populations of indigenous and protected plant species within the DWS Purchased Boundary, and thereby negatively impact on the biodiversity richness of the area.;
- There is a lack of community awareness regarding environmental and tourism education;
- Lack of water supply to the nearby community discourages the community to engage in tourism activities;
- EKZNW makes accessing the Dam difficult for the local community due to high access fees charged;
- There is little to no transparency in informing the communities about using the Dam for recreational activities; and
- Drowning incidents, due to lack of swimming and boating skills.

Recommendations:

This RMP recommends the implementation of the following immediate actions:

- Appoint EKZNW 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;
- Remove all alien invasive vegetation within the purchased boundary and the surrounding adjacent area. Develop waste management plan for the Dam and surrounding areas to prevent pollution;
- All developments should be properly planned, based on a proper and detailed survey, in order to avoid the disturbance of biodiversity;
- Permits (fishing licence) must be acquired and the use of gill nets must be prevented;
- Implement skills development programmes where opportunities exist;
- Ensure organised development, equitable visitor access, sound resource management and optimal community beneficiation, as per the proposed Zoning Plan in Section 4.2;
- Ensure public safety with regards to the use of inland vessels, as per the Carrying Capacity in Section 4.2.3; and
- Ensure resource management, resource utilisation and benefit flow management, as per the Strategic Plan and Key Performance Areas in Section 4.3.

Review

According to the DWAF (2006), the RMP may be reviewed and updated every five (5) years to ensure that the management objectives are relevant and that management actions are continually improved. The BP needs to be updated annually. **Figure 20** illustrates the RMP and BP review framework.

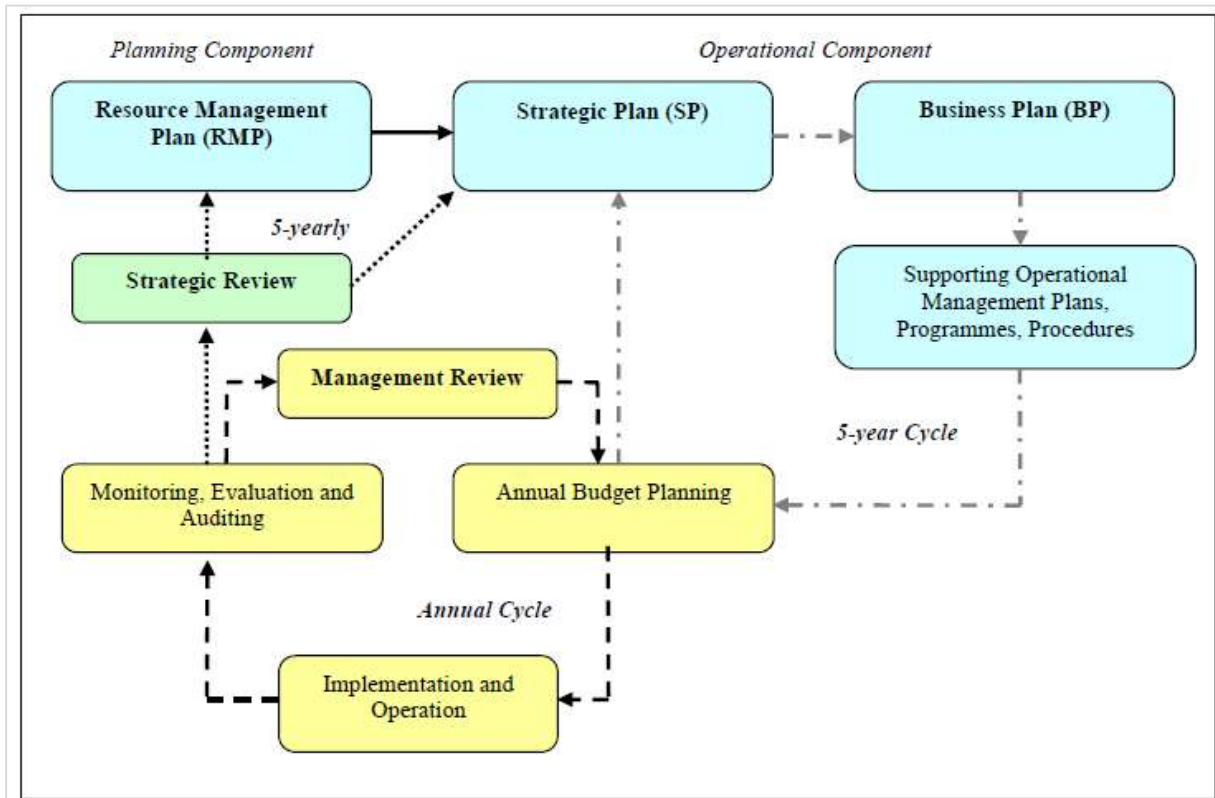


Figure 20: RMP and BP Review Framework

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APPENDICES

APPENDIX A: STAKEHOLDER DATABASE REGISTER

APPENDIX B: NEWSPAPER ADVERT

APPENDIX C: FLYERS

APPENDIX D: EMAILS

APPENDIX E: BACKGROUND INFORMATION DOCUMENT (BID)

APPENDIX F: COMMENTS AND RESPONSES REGISTER

APPENDIX G: EXAMPLES OF SUCCESSFULLY CO-FUNDED PROJECTS

APPENDIX H: POTENTIAL CO-FUNDERS

APPENDIX I: BUSINESS PLAN