### NATIONAL WATER RESOURCE INFRASTRUCTURE (NWRI)

# Resource Management Plan GCUWA WEIR

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WATER IS LIFE - SANITATION IS DIGNITY





Department: Water and Sanitation REPUBLIC OF SOUTH AFRICA



#### GCUWA WEIR RESOURCE MANAGEMENT PLAN

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### ACKNOWLEDGEMENTS

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- Amathole District Municipality;
- Amazizi Traditional Leader;
- Aspire;
- Department of Water and Sanitation;
- East London South African Police Service Divers;
- Gcuwa Weir Project Steering Committee;
- Mission Community Traditional Leader;
- Mnquma Local Municipality;
- South African Maritime Safety Authority; and
- The community members of, Extension 6, Mission, Mzantsi, Zazulwana and INgxalathi;
- Zazulwana Development Trust.

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Review Period	Month			Year		
Annual Review of Business Plan	December	2018 <sup>1</sup>	2019	2020	2021	2022
Five (5) Yearly Review of RMP	December			2022		

<sup>&</sup>lt;sup>1</sup> The implementation of the RMP and BP requires a year budget planning prior to operationalisation.

### **AMENDMENTS PAGE**

Revision No	Description	Date
1	Draft RMP for DWS Review	08/10/2015
2	Draft RMP for Public Review	09/11/2015
3	Draft RMP for DWS Review	23/11/2015
4	Draft RMP for Public Review	15/12/15
5	Final RMP for DWS Review	11/04/2016
6	Final RMP for DWS Review	01/07/2016
7	Final RMP for DWS Approval	16/08/2016
8	Final RMP for DWS Approval	30/11/2016
9	Final RMP for DWS Approval	14/12/2016

### LIST OF ACRONYMS

ADM	Amathole District Municipality
AtoN	Aid(s) to Navigation
BID	Background Information Document
BP	Business Plan
BRSR	Butterworth Reconciliation Strategy Report
CATHSSETA	Culture, Arts, Tourism, Hospitality, Sports Sector, Education and Training Authority
СВА	Critical Biodiversity Area
<b>CD: IO MANCO</b>	Chief Director: Infrastructure Operations Management Committee
COGTA	Department of Cooperative Governance and Traditional Affairs
CPSI	Centre for Public Service Innovation
DAFF	Department of Agriculture Forestry and Fisheries
DEA	Department of Environmental Affairs
DHS	Department of Human Settlement
DMC	Dam Management Committee
DoT	Department of Transport
DPW	Department of Public Works
DRDLR	Department of Rural Development and Land Reform
DRPW	Department of Roads and Public Works
DSR	Department of Sports and Recreation
DWA	Department of Water Affairs
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
ECBC	Eastern Cape Biodiversity Conservation Plan
ECC	Effective Carrying Capacity
EMF	Environmental Management Framework
GDP	Gross Development Product
GIAMA	Government Immovable Asset Management Act
GP	Guideline Programme
GPS	Global Positioning System
GVA	Gross Value Added
GWWs	Government Waterworks
I&APs	Interested and Affected Parties
IA	Implementing Agency
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IDP	Integrated Development Plan
IEE	Integrated Environmental Engineering
	Integrated Resource Management Plan
	Local Accountable Aton Parties
LSDF	Local Spatial Development Framework
	Mamarandum of Amarant
	Internorational Department of Tourism
	National Departmental Management Act
	National Environmental Management Act
NT	National Project Steering Committee
IN I	National freasury

NWA	National Water Act
NWRI	National Water Resource Infrastructure
ОМС	Operations Management Committee
PCC	Physical Carrying Capacity
PP	Public Participation
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
SANRAL	South African National Roads Agency Limited
SAPS	South African Police Services
SASCOC	South African Sports Confederation and Olympic Committee
SDF	Spatial Development Framework
SWOT	Strengths, Weaknesses, Opportunities, Threats
TWQR	Target Water Quality Range
VU	Vulnerable
WSP	Water Service Provider
WTWs	Water Treatment Works
WWTWs	Waste Water Treatment Works

### **EXECUTIVE SUMMARY**

Mandate: The Department of Water and Sanitation (DWS), through the National Water Act, 1998 (Act No. 36 of 1998), is mandated to protect aquatic and associated ecosystems and their biological diversity. The Minister of Water and Sanitation, as the custodian of the nation's water resources must ensure that the Government Waterworks (GWWs), including Gcuwa Weir are protected, used, developed, managed and controlled in a sustainable manner, for the benefit of all. To assist the Minister in attaining the mandate, and to ensure that access to, and use of, the dam is equitable, the DWS initiated and commissioned the development of the Resource Management Plan (RMP) for Gcuwa Weir.

**Purpose of the RMP:** The RMP is a plan which aims to regulate access and the recreational utilisation of a water resource and the surrounding state land, in ways which promote community participation and beneficiation, environmental conservation and unlock socioeconomic potential of the water resource.

According to DWAF (2006), the use and management of the GWWs for recreation purpose needs to be based on Integrated Resource Management Plan (IRMP) included within the RMP.

**Location of the dam:** Gcuwa Weir is an arch and gravity type, which impounds Gcuwa River. It falls under Ward 17 within the jurisdiction of the Mnquma Local Municipality (MLM), which forms part of the Amathole District Municipality (ADM) in the Eastern Cape Province, South Africa. Its GPS coordinates are: **32°19″15.0′S 28°8″7.0′E.** 

**Purpose of the dam:** The primary purpose of Gcuwa Weir is to provide raw water for industrial, and domestic use.

The dam also currently offers recreational activities such as picnicking. The picnic area at

the weir was established by the MLM for the 2010 World Cup, and it has since catered for private and public functions (ADM, 2010).

**Dam ownership and management:** Gcuwa Weir is owned and operated by the DWS. There is no access control to the weir and to the water surface. Communities access the weir at any point allowed by the topography (flat surface).

There is currently no institutional structure to manage the recreational use of the dam. However, the structure has been proposed in the RMP. The recreational institutional structure is necessary for the effective mandate of the Gcuwa Weir Dam for recreational purposes.

**Stakeholder engagement:** The success of the development and implementation of the RMP depends on the role players and their level of participation. It is thus recognized that different roles and responsibilities of the stakeholders [Authorities and Interested and Affected Parties (I&APs)], their relationship towards each other and the steps in the planning procedure are imperative in the successful development of the RMP. As such, proper consultation with the public was done in order to help in producing a credible RMP.

DWAF's Guidelines for Public Participation (2001) outlines three (3) broad phases for public participation namely the **Planning**, **Participation** and **Exit phase**.

During the **Planning phase** a site inspection was conducted and literature reviewed in order to gather baseline information about the dam. A process was also established to get into contact with the I&APs and relevant authorities to ensure co-operative interests and support in the RMP project.

The **Participation phase** entailed three (3) important aspects, namely:

- Informing stakeholders about the RMP project;
- Meeting the stakeholders to present the RMP process; and
- Giving Feedback in the form of meeting minutes, follow-up e-mails, telephonic and direct communication.

During the **Exit phase**, a draft RMP was presented to the stakeholders for comment and inputs. The Exit phase entailed two (2) important aspects, namely:

- Ensuring that all goals, challenges, concerns, objectives and the vision of the dam are identified and documented in the RMP; and
- Officially ending the public participation process.

**Identified objectives and vision:** During the Authority and Public Meetings issues of concerns were raised from which common objectives were identified and a vision for the dam, for a period of 20 years, were formulated by the stakeholders.

The identified key common objectives are:

- To improve the water quality of the weir by dredging the silt and utilise it for communal projects or long term investments;
- To uplift the Local Economy and increase benefit flows to the surrounding communities through employment empowerment, skills transfer through environmental education programmes;
- The weir to be recreationally marketed as it is known to the communities for its primary function for water provision; and
- To have an effective and suitable organizational structure that will effectively manage the recreational utilisation of the weir and its surrounding land.

A vision for the weir, for a period of 20 years was formulated by stakeholders to be as follows:

"To promote and maintain sustainable utilisation of the water resource and its surrounding environment, also to create recreational developments providing job opportunities linked with skills transfer".

The aforementioned objectives and vision are aimed at supporting the attainment of DWS's vision, mission and objectives.

**Tourism Potential:** The following were identified as some of the potential recreational developments at the Gcuwa Weir that could enhance the tourist attraction:

- Access control;
- Security guards to monitor safety around the weir; and
- Refurbishment of the braai facilities.

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### **CHAPTER 1: INTRODUCTION**

#### 1.1 BACKGROUND OF GCUWA WEIR

Gcuwa is not a dam, but a weir which serves as a barrier that balances flow from Xilinxa Dam to Butterworth Water Treatment Works (WTW).The weir is located in a small town in the Eastern Cape Province which serves as the major settlement in the Mnquma Local Municipality (MLM). The weir is approximately 3km's from Butterworth Town and is boarded by villages' namely: iNgxalathi, Zazulwana and Ext 6 Township. The main water source is the Xilinxa Dam from where water is gravitated to the Gcuwa Weir. Raw water from the weir gravitates into the WTW.

The weir is a 16 m high concrete gravity with a full supply capacity of 1.6 million m<sup>3</sup>, 1.9 million m<sup>3</sup>/a, of water supply is allocated to Butterworth Town. When there is insufficient water in the weir, releases are made from the Xilinxa Dam to meet this shortfall. The weir falls in Ward 17 under the MLM within Amathole District Municipality (ADM) in the Eastern Cape Province. (ADM, 2010).

Potable water for Butterworth town and surrounding areas are supplied using surface water. Gcuwa Weir has been designed to alter the water flow from the Xilinxa Dam, which is situated approximately 26 km north of Gcuwa Weir. The water is then gravitated into the Butterworth WTW which is located downstream approximately 2.5 km from the weir. The WTW supplies water to the urban area of Butterworth, surrounding townships and villages in close proximity to Butterworth. (ADM, 2010).

Other than altering the water flow from Xilinxa Dam, Gcuwa Weir has been identified as a recreational and leisure hub. The picnic area has been established by the MLM for the 2010 World Cup. It has since offered private and public functions (ADM, 2010). The weir and its surrounding area is a perfect place for leisure outings. It has braai and picnic areas frequently used by the public. It has a dramatic scenic view and is very attractive. See **Figure 1** and **2**.

**Figure 3** illustrates the Gcuwa Weir Locality Map. The study area for the RMP for the Gcuwa Weir includes the State land that was expropriated for the construction and management of the weir, as illustrated on the purchased boundary map in **Figure 4**.



Figure 1: Picnic & Braai Area



Figure 2: Picnic Area Developed & Managed by MLM

The weir profile is summarized in Table 1.

Table 1: Gcuwa Weir Profile

Gcuwa Weir Profile				
Location	South Africa			
Province	Eastern Cape			
District Municipality	Amathole District Municipality			
Local Municipality	Mnquma Local Municipality			
Nearest Town	Butterworth			
Completion Year	1972			
Co-Ordinates	32°19″15.0′S 28°8″7.0′E			
Purpose	Industrial and Domestic Use			
Owner	DWS			
Water Management Area	Mzimvubu-Keiskamma			
Quaternary Catchment	\$70E			
River	Gcuwa River			
Capacity (m <sup>3</sup> )	900			
Surface Area (ha)	40.4			
Wall type	Arch and Gravity			
Wall Height (m)	19			
Crest Length (m)	270			

Source: Department of Water Affairs (List of registered dams; March 2013



Figure 3: Locality Map for Gcuwa Weir



Figure 4: Purchased Boundary Map for Gcuwa Weir

#### 1.2 BIOPHYSICAL DATA

#### 1.2.1 Climate

#### 1.2.1.1 Temperature

According to DRPW (2011), Average temperature for Butterworth ranges from 19.2°C in July to 25.6°C in February. The region is the coldest during July when the temperature drops to 6.2°C on average during the night.

#### 1.2.1.2 Rainfall

Butterworth receives about 596 mm of rain annually with most rainfall occurring mainly during summer. It receives the lowest rainfall (8 mm) in June and the highest (89 mm) in March (DRPW, 2011).

#### 1.2.2 Flora

According to Aspire (2013), the study area falls on a Critical Biodiversity Area (CBA) Class 2. The CBAs are terrestrial and aquatic features in the landscape that are critical for conserving biodiversity and maintaining ecosystem functioning. CBA Class 2 means that the study area is near-natural landscape.

Aspire (2013), further highlights that the area falls onto Vulnerable (VU) Classed vegetation types, Bhisho Thornveld. Bisho Thornveld has a conservation status of Least Threatened (See **Figure 5** for Land Cover Map illustrating the vegetation within the Gcuwa Weir and how it is spread out).

NB: At the time of the study, there were no Invasive Alien Vegetation (both terrestrial and aquatic) identified.

#### 1.2.3 Topography

The South African National Biodiversity Institute (SANBI, 2006), describes the landscape features as rising and falling to moderately steep slopes, sometimes in shallow, incised drainage valleys. (See **Figure 6** for Elevation Map Illustrating topographical features of Gcuwa Weir).

#### 1.2.4 Geology and Soils

Mudstone with subordinate sandstone of the Adelaide subgroup (Beaurfort Group and Karoo Supergroup) underlies most of the area and is intruded by Karoo dolerite dykes and sills. The substrate is primarily loamy soils, but there is significant variability (SANBI, 2006). (See **Figure 7** for Geology Map illustrating the geological properties surrounding the Gcuwa Weir).

#### 1.2.5 Hydrology

#### 1.2.5.1 Surface Water

The weir is within the Mzimvubu -Keiskamma Water Management Area (WMA) in the Eastern Cape. The weir receives the water flow from Xilinxa Dam, which is the main dam that supplies ADM with potable water.

According Umvoto (2010), Gcuwa River impounded by the Gcuwa Weir, is severely polluted due to run-off from industries, urban areas and from a large unlicensed solid waste site, which is located on the river bank. The weir is heavily silted up (Aspire, 2013). (See **Figure 8** for Hydrology Map illustrating Quaternary Catchment for Gcuwa Weir).



Figure 5: Land Cover Map for Gcuwa Weir



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### Elevation:GcuwaWeir Dam



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Figure 6: Elevation Map for Gcuwa Weir



Figure 7: Geology Map for Gcuwa Weir



Figure 8: Hydrology Map for Gcuwa Weir

#### 1.2.5.2 Water Quality

The term water quality refers to the physical, chemical and microbiological properties of water that determines its fitness for use (WRC, 1998).

According to WRC (1998), "In nature, water rarely occurs in its pure form and normally contains a variety of substances. People generally have their own feeling for what "good" or "bad" quality water is, without giving it much thought. If water does not look clean, people think it is bad. On the other hand clear water is not always safe. This means that good quality water sources are sometimes rejected while bad quality sources are accepted".

In **Table 2**, the water quality of the weir is assessed to determine its fitness for recreational use:

**NB:** The analytic results tabulated in **Table 2** were the only ones available, and retrieved from DWS's Water Quality Management System when the study was conducted.

 Table 2: Water Quality Analysis for Gcuwa Weir (DWS Water Quality Management System, 2014)

Parameter	Analytical Results	Water Quality Target Range (Recreational Purposes)	Effects
Algae (g/chl-a)	Not Available	0 - 15	Nuisance conditions negligible for lower end of range, but at a mean concentration of 15, severe nuisance 0 - 15 conditions encountered for < 12 % of a year. No health effects
pH (pH units)	Not Available	6.5 -8.5	Minimal eye irritation occurs. The pH of water is well within Quality Range the buffering capacity of the lachrymal fluid of the human 6.5 - 8.5 eye. Skin, ear and mucous membrane irritation absent.
Turbidity (NTU)	Not available	3	Unsuitable for swimming. However, if lack of clarity (or turbidity) is the only consideration preventing the use of a water body for swimming, then it may be allowed, provided all subsurface, potential hazards are removed and signs indicating water depth are clearly posted. Risk of disease transmission by organisms associated with particulate matter increases but this cannot solely be determined on the basis of clarity measurements. May be some depreciation in aesthetic quality and enjoyment of the water body
Phosphate (measured as Inorganic Phosphorus mg/L)	Not Available	<5	Oligotrophic conditions; usually moderate levels of species diversity; usually low productivity systems with rapid nutrient cycling; no nuisance growth of aquatic plants or blue-green algae.

Source: Water Quality Standards: Department of Water and Sanitation, Recreational Use: Volume 2, 1996

The water quality results available were for chemical elements such as Magnesium, Calcium, and Fluoride etc which don't have any limitations for recreational use. However analytical results for the physical parameters listed in **Table 2** were not available during the time of research.

#### 1.2.5.3 Weir Capacity

According to Aspire (2013), "The weir has a capacity of 900 MI that has been reduced due to siltation". This capacity might have been reduced due to the build-up of silt in the weir.

#### 1.3 BUILT ENVIRONMENT

#### 1.3.1 Infrastructure

The main infrastructure at the weir include:

- DWS offices (in a state of despair) and
- Ablution facility.

#### **1.3.2** Transport Network

The weir is located on the north-western boundary of Butterworth, to the north of the N2 and adjacent to the residential area Extension 6. It is ideally located for ease access from the N2 when entering or leaving Butterworth Town (Aspire, 2013). The access road to the weir is far from other nearby communities such as iNgxalathi, Zazulwana, and Mission.

#### 1.4 USES AND USERS OF THE WEIR

The functions of the weir are categorized into two (2) classes namely: Primary and Secondary.

#### **1.4.1** Primary Functions

#### 1.4.1.1 Domestic Use

Gcuwa Weir has been designed to alter the water flow from the Xilinxa Dam, which is situated approximately 26 km north of the weir. The water is then gravitated into the Butterworth WTW which is located downstream approximately 2.5 km from the weir and purified for domestic uses.

According to ADM (2010), "The scheme provides water to the urban portion of the

strategy area, namely Butterworth and its surrounding townships and some 16 villages around the urban area".

#### 1.4.2 Secondary Functions

#### 1.4.1.2 Recreational Use

Currently there are no authorised water based recreational activities taking place at the weir. There are currently a number of braai and picnic facilities alongside the weir, however these are in a state of disrepair. The structures requires an upgrade.

#### 1.5 RECREATIONAL INSTITUTIONAL STRUCTURE

There is currently no recreational structure, however as part of the RMP process, the structure was proposed to assist in managing effectively the recreational use of the weir.

#### 1.5.1 Management of Water Surface

The management of the surface water in terms of operation of the weir is done by DWS.

In addition to the DWS, Local Accountable AtoN Parties (LAAP) and other Bodies providing access to Government waterways and watercourses have a responsibility to ensure that the required fixed and/or floating AtoN are provided after obtaining the necessary support from DWS and thereafter the permission by SAMSA.

#### 1.5.2 Access

Access control is a major issue at the weir, hence there are several uncontrolled access points that increases the rate of vandalism of the existing infrastructures (braai facilities and DWS offices) adjacent to the weir. This needs to be addressed, as it can affect the potential for tourism development in the area.

There is no access control to the weir and to the water surface. Communities access the weir at any point allowed by the topography (flat surface). This has resulted to vandalism of the braai facilities and DWS offices. The only access control is at the picnic area controlled by the municipality.

#### 1.5.3 Event Management

The Municipality needs to submit a request for permit to DWS prior to hosting any events at the picnic area.

#### 1.6 SAFETY

#### 1.6.1 Safety Navigation

There is currently no adequate, standardized and harmonized fixed and floating aids to Navigation (AtoN)<sup>2</sup> and Demarcation Markers in Place.

#### 1.6.2 Incident Management

There is no specific incident management system in place to ensure that incidents are responded to in a coordinated manner.

#### 1.7 SOCIO-ECONOMIC ENVIRONMENT

#### 1.7.1 Social Audit

The main purpose of social audit is to examine the general status of the study area and to determine issues that need to be addressed when developing the RMP in order to overcome potential difficulties in an area. The study area falls entirely within MLM under Ward 17 as shown in **Figure 9**. An understanding of socio-economic conditions of Ward 17 can be used at a later stage to determine the impact of a RMP in the area in terms of changed socio-economic conditions.

A social Audit which focused on the population composition of the ward, employment status and Education level was undertaken and is presented in section 1.7.1.1 to 1.7.1.3, respectively.



Figure 9: MLM Ward 17 Boundary (Mobilitate, 2014)

enhance the safe and efficient navigation of vessels and/or vessel traffic".

<sup>&</sup>lt;sup>2</sup> A marine Aid to Navigation (AtoN) is defined by the international Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) as "A device or system external to vessels that is designed and operated to

#### 1.7.1.1 Population Dynamics

In terms of population groups dominating in Ward 17, **Table 3** and **Figure 10** illustrates the highest number of the population groups residing in the ward.

Table 3: Population Groups in Ward 17 (Census 2011)

Description	Ward 17 (2011)
Black African	7 952
Indian or Asian	8
White	4





## 1.7.1.2 Employment Status for Ward 17 (2011)

In **Table 4** and **Figure 11** the employment status of Ward 17 is illustrated. It is evident that only 14% of the population is of working group. The concern is that 57% of the economically inactive population showing they are no longer seeking for employment. This speaks to the fact that there is large proportions of people within Ward 17 who have limited income sources and few hopes that this situation will change in the future.

The direct positive impact that this has on the study area is that there is a large pool of potential labour should tourism development projects that are labour intensive be implemented. It is however unlikely that the unemployed group in this region have the necessary skills to enter the tourism market. High unemployed rate is often accompanied by crime rates and poverty, strong deterrent for tourism in an area.

Table 4: Labour Force in Ward 17 (Census 2011)

Description	Ward 17 (2011)
Employed	632
Unemployed	851
Discouraged Work	399
Seekers	
Economically inactive	2 484



Figure 11: Labour Force within Ward 17 (Census 2011)

#### 1.7.1.3 Educational Levels (2011)

The level of education illustrated in **Table 5** and the **Figure 12** shows that in Ward 17, most of the population have the secondary schooling. Only 4% of the population has furthered their studies in higher institutions. **Table 5:** Educational Levels within Ward 17 (Census 2011)

Description	Ward 17 (2011)
No schooling	226
Primary schooling (grade 0 – 7)	2245
Secondary schooling (grade 8 – 12)	2327
Tertiary/ Higher education	205



Figure 12: Educational Levels within Ward 17 (Census 2011)

#### 1.7.2 Gross Value Added

According to ADM (2011-2016), the ADM has 3rd largest economy in the province after the Nelson Mandela Metropolitan Municipality (NMMM) and Buffalo City Metropolitan Municipality (BCMM), contributing 12 percent to the provincial economy. Whilst BCMM is no longer part of the ADM economy, it remains the regional economic hub. The major towns in the ADM are now Butterworth, Idutywa, Peddie, Alice and Stutterheim. Economic activity is concentrated mainly within the Central Business Districts of these major towns.

These towns also function as centres of economic activity for surrounding areas and smaller towns, with manufacturing, trade, finance and community services sectors dominating the district's economy. As a result of its central location in the province, the Amathole District has good economic links with neighbouring districts outside of these towns, the rest of Amathole is mainly contrasted with an extremely poor rural economy in former homeland areas.

An unemployment rate of 45% was recorded in the area in the year 2010 and 55% of the population in the district were estimated to be living below the minimum living level threshold. High levels of poverty and inequality exist especially in the eastern part of the district. There is a substantial need for investment in social and economic infrastructure throughout the district, but especially in the former homeland areas. See Figure 13 for the sectors that make profit within the municipality.



Figure 13: MLM GVA (MLM, 2014-2015)

- The economy of ADM is dominated by the community services sector which contributed 44% to the GDP of ADM in 2011. This sector is also the major employer in the District as it accounted for 43% of all jobs in 2011.
- The second most important sector is the finance and business services sector which contributed 19% to the GDP of in 2011. However this sector is not labour intensive as it contributed only 4 % of the formal jobs in the District in 2011.
- The third most important contributor to the GDP of the Amathole District is the manufacturing sector, which accounted for 14% of ADM's GDP in 2011. This sector is also a major employer as it contributed 23% of ADM formal jobs in 2010
- The contribution of the agriculture as well as mining sectors has been very minimal in the period from 1996 to 2010.

#### 1.7.3 Adjacent Communities to the Weir

The weir is surrounded by communities including: Mzantsi, Extension 6, Zazulwana, Ingxalathi etc. however the communities that are much closer to the weir are Ext 6 and Ngxalathi.

#### 1.7.5 Community Beneficiation

It is DWS's belief that Local Communities should equally share the benefits emanating from the utilisation of the weir for recreational purposes, by ensuring that they have both physical access to the resource, as well as access to the water-based recreation economy.

According to DWAF (2006), by ensuring that the Local Communities move beyond merely being affected by or living close to a water resource, but rather undertaking the transition to become participants will ensure that water resources can and will be protected by the people closest to and most affected by the weir

The community will benefit in amongst others the following ways:

- By having equitable access to the weir;
- The community needs will be addressed in an appropriate and equitable manner;

- By being safe while accessing and using the weir;
- By being given first preference when there are employment opportunities and skills development;
- Through the PPP; and

 By participating in decision-making with respect to major developments planned or proposed for the weir (through the Dam Management Committee).

### **CHAPTER 2: LEGISLATIVE FRAMEWORK**

The RMP forms the overarching framework for the management of Gcuwa Weir. It is informed by relevant policy, legislation and planning documents administered by other government departments. Similarly, these government departments are required to use the RMP to inform the development of future policy, legislation and planning documents.

- The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996), Section 24: Provides that, everyone has a right to an environment that is not harmful to their health or well-being.
- II. Conservation of Agricultural Resource Act, 1983 (Act No. 43 of 1983): Provides for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith. Regulation 7 and 8 within the 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.
- III. 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.
- IV. 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.

- v. Government Immovable Asset Management Act, 2007 (Act No. 19 of 2007): 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.
- VI. 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.
- VII. 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.
- VIII. Merchant Shipping (National Small Vessel Safety) Regulations (2007): These Regulations provide *inter alia* 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.

- IX. 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.
- X. National Environmental Management Act, 1998 (Act No. 107 of 1998): 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.
- XI. National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) and Related Regulations: This Act aims to provide the framework, norms and standards for the conservation, sustainable use and equitable benefitsharing of South Africa's biological resources.

The Alien and Invasive Species Regulations for this Act came into effect 01 October 2014. NEMBA together with these Regulations aim to prevent the introduction and spread of alien and invasive species across South Africa.

- XII. National Environmental Management: Protected Area Act, 2003 (Act No. 57 of **2003):** 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 natural as landscapes and seascapes.
- XIII. National Treasury Public Private Partnership (PPP) Toolkit for Tourism, 2005: This toolkit assist 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.
- XIV. National Water Act, 1998 (Act No. 36 of 1998): The purpose of the Act is to ensure that the nation's water resources used, protected, are 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 available for made recreational subject purposes, to controls determined by the Minister and regulations made by the Minister.

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.

- XV. 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.
- XVI. Public Finance Management Act (PFMA) (Act No. 29 of 1999): 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.
- XVII. 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 among other things,
  - Responsibility for safety and security at the events;
  - Risk categorization of events; and
  - Safety certificates.
- XVIII. South African Maritime Safety Authority Act, 1998 (Act No. 5 of 1998): 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.

XIX. Water Services Act (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.

The RMP process also takes cognizance of the following Legislations, Policies, Programmes and Reports:

- Amathole District Municipality IDP Review (2013-2014).
- Amathole District Municipality Reconciliation Strategy for all town in the Southern Planning Region (2010).
- Broad-based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003).
- Butterworth Economic Regeneration: Gcuwa Dam Business Plan (2013).
- Butterworth Spatial Development Framework (2013).
- Communal Land Rights Act, 2004 (Act No. 11 of 2004).
- Development Facilitation Act, 1995 (Act No. 67 of 1995).
- Environmental Management Plan (2011).
- Intergovernmental Relations Framework Act, 2005 (Act No. 13 of 2005).
- Land Administration Act, 1995 (Act No. 2 of 1995).
- Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000).
- National Heritage Resources Act, 1999 (Act No. 25 of 1999).
- Occupation Health and Safety Act, 1993 (Act No. 85 of 1993).
- Reconciliation Strategy for Butterworth (2010).
- Reconciliation Strategy for Mnquma Rural 3 Village Cluster (2010).
- Restitution of Land Rights Act, 1994 (Act No. 22 of 1994).
- State Land Disposal Act, 1961 (Act No. 48 of 1961).

- > Safety of Navigation: In addition to its common-law responsibility, DWS is, in terms of the requirements described in the National Water Act, Act No 36 of 1998, amongst others, responsible for the safety of GWWs. DWS, its delegated In addition to the DWS, Local Accountable AtoN Parties (LAAP) and other Bodies providing access to Government waterways and watercourses have a responsibility to ensure that the required fixed and/or floating AtoN are provided after obtaining the necessary support from DWS and thereafter the permission by SAMSA. In order to demarcate specific zones/areas, standardised demarcation markers are to be used in conjunction with the relevant AtoN.
- SAMSA Marine Notices and its Directive on the Standardisation of fixed and floating AtoN and Demarcation Markers on all navigable Inland Waterways in the Republic of South Africa.

The aim is to enhance the development of a best practice model to ensure a safe and structured inland maritime environment and culture, whilst protecting the country's precious water resources.Not only do these Acts, Regulations and Frameworks guide specific decisions and actions, they also provide the framework for monitoring performance and compliance, and provide guidelines regarding contravention, offences and penalties. This list is not extensive, other legislation could be applicable. public sector partner, or a delegated water management institution, has therefore the responsibility to provide the required fixed and/or floating AtoN for general navigation.

### **CHAPTER 3: WHAT IS A RESOURCE MANAGEMENT PLAN**

#### 3.1 DEFINITION OF RMP

A Resource Management Plan (RMP) is a plan which aims to regulate access and the recreational utilisation of a water resource and the surrounding state land, in ways which promote community participation and beneficiation, environmental conservation and unlock socio-economic potential of the water resource.

Recreational use includes activities ranging from leisure, sport to culture and religion. Although recreational use does not involve consumption of water, it is still a major water use and needs to be managed effectively with minimal environmental impacts and to ensure communities have access to water based economy.

#### 3.2 PURPOSE OF THE RMP

The main aim of RMPs will be to attain the objectives underlying sustainability and to compile functional, workable sustainable access and utilisation plans for water resources.

Without approved management plans relating to water resources utilized for recreational

purposes, it is difficult for informed decisions to be made necessitating a precautionary approach to access, utilisation and development proposals.

One of the components of the RMP process is to implement an Institutional Plan for effective management of GWWs. The focus on the Institutional Plan is accompanied by a Zoning Plan which is influenced by current and potential recreational uses. The RMP also outlines the Strategic Plan for all the identified objectives for the weir In addition a Financial Plan is incorporated into the Business Plan (BP) provides and guidance on funding requirements and funding options to implement the potential recreational activities at the weir.

#### 3.3 PROCESS TRIGGERS

Triggers are factors that have encouraged DWS to initiate and commission the development of RMPs.

A number of generic factors have been identified by DWS for the development of RMPs, however, the Process Facilitator identified site specific trigger factors, as illustrated by **Table 6**. Table 6: Trigger Factors for the Development of Gcuwa Weir RMP

Trigger Factors	Description
Resource Management	<ul> <li>Water Quality Issues</li> <li>There are water quality issues (siltation and water pollution) in Gcuwa Weir that needs to be addressed as part of the RMP process.</li> </ul>
Recreational Industry Involvement	<ul> <li>Public Safety</li> <li>There is issue of vandalism at the braai area and DWS offices resulting from no access control around the weir. The safety of DWS officials working at the weir is questionable.</li> </ul>
Community Participation and Beneficiation	<ul> <li>Community Participation         <ul> <li>To develop and improve the participation and beneficiation of surrounding Local Communities. Ensuring that the Local Communities benefit from the socio-economic potential of the weir.</li> <li>Communities will participate in decision-making with respect to major developments planned or proposed for the area.</li> <li>Identify potential resources and attractions within their communities; and</li> <li>Oppose developments that are harmful to the local environment and culture of the community etc.</li> </ul> </li> <li>Beneficiation:         <ul> <li>Tourism development will offer communities, as tourism is widely recognized for creating and sustaining job opportunities, opportunities to bring new money to the area. Tourists will support local businesses and the profits will assist in upgrading recreational facilities in a state of despair.</li> </ul> </li> </ul>
Public Policy	<ul> <li>Local planning Initiatives</li> <li>To ensure that the RMP incorporates the planning documents from Local or District Municipality in cases where the weir is identified as local development objective in terms of the Integrated Development Plan (IDP), Spatial Development Framework (SDF) or Tourism Master Plans for the relevant Local or District municipality.</li> </ul>
# 3.4 RMP DEVELOPMENT PROCESS

The RMP is developed in accordance with the RMP guideline procedure (DWAF, 2006) as illustrated in **Figure 14.** 



Figure 14: RMP Procedure

# 3.5 RMP PLANNING STAGES

# 3.5.1 Desktop Study

The desktop study was conducted with the aim of acquiring background information about the Gcuwa Weir. This was done through literature review. This study provided information such as the location of the dam, user groups, current activities, previous studies conducted for the dam.

# 3.5.2 Site Inspection

A site inspection was conducted at Gcuwa Weir on **09** June **2014** to gather baseline information using a checklist questionnaire. The site inspection was undertaken with the DWS delegates (DWS IEE, Southern Operations Manager, Dam Manager and Southern Operations Champion). Photos of the study area were also taken during site inspection as illustrated in **Figure 15**.



Figure 15: Overview of the Water Surface

More information was collated from the second meeting that was held with the MLM. The meeting was held at **MLM offices** on **10 June 2014**. The attendees of the meeting included municipal representatives

# 3.5.3 Public Participation

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

- To improve decision-making;
- To bring about sustainable development; and
- To normalise the attitudes of Stakeholders (Authorities and I&APs).

A Public Participation was conducted in order acquire information for Phase 2 to (Encumbrance Survey), Phase 3 (Objective Identification) and Phase 4 (Research/ Information Gathering) from Stakeholders, which was used to complete Phase 5 (Integrated Management, Zoning and Institutional Planning). In order to successfully complete the RMP, it is essential that the information obtained in the previous phases is utilised as planning input.

The public participation process for this project was formulated to include the following objectives:

- The identification of role players;
- The introduction of the RMP project to role players and inform them about their roles and responsibilities;
- The engaging of the Stakeholders (Authorities and I&APs) in the planning process;
- The answering of questions and noting of concerns;
- The identification of important issues, problems, conflicts and alternatives;
- Identification of the overall vision of the weir;
- The elimination of false expectations and preconceptions; and
- The creation of awareness amongst users.

DWAF's Guidelines for Public Participation (2001) outlines three (3) broad phases for public participation namely the **Planning**, **Participation** and **Exit phase**. Summarized below are the aspects of each phase and the approach for this project.

#### 3.5.3.1 The Planning Phase

The Planning Phase entails three (3) important aspects namely;

- Decision analysis;
- Participation planning; and
- Implementation planning.

During the Planning Phase a site inspection and literature review was conducted to gather baseline information about the weir. A process was also established to get into contact with the I&APs and relevant Authorities to ensure co-operative interests and support in the RMP project.

# 3.5.3.1.1 The Role Players

It is recognized that different roles and responsibilities of the stakeholders (Authorities and I&APs), and their relationship towards each other and the steps in the planning procedure are imperative in the successful development of the RMP. It is also important that proper consultation with the public is done in order to produce a credible RMP. As such, the success of the RMP is dependent on the level of involvement of the various stakeholders. Various stakeholders were identified and invited to participate in an open and consultative process. (See attached Appendix F). The stakeholder list is updated on a continuous basis throughout the RMP process.

# 3.5.3.2 Participation Phase

The **Participation Phase** entails three (3) important aspects:

- Informing Stakeholders explained briefly under **3.5.3.4.** Advertising Process
- Meeting the Stakeholders explained briefly under 3.5.3.5 Direct Communication.
- Feedback it is of utmost importance that feedback is directed to and from Stakeholders. In this project feedback thus far has been given in a form of minutes of the meetings and follow up emails.

# 3.5.3.3 Exit Phase

The **Exit Phase** entails two (2) important aspects namely:

- Ensuring that all goals, challenges, concerns, the objectives and the vision for the weir have been identified and documented.
- Officially ending the public participation process of the RMP development.

During this phase, a draft RMP will be presented to the stakeholders so that they can comment and give inputs.

# 3.5.3.4 The Advertising Process

# 3.5.3.4.1 Compilation and Distribution of Background Information Documents (BID)

The purpose of this document was to provide stakeholders with the background information about the proposed RMP project and to introduce the processes to be followed in developing the plan. It also aimed to inform stakeholders on how to fully participate in the process and encouraged active attendance to stakeholder's engagement meetings. The BID was compiled from the information collated through the desktop study and site inspection (See attached **Appendix B**).

# 3.5.3.4.2 Newspaper Advert

A Newspaper advert regarding the RMP project was placed in the **iSolomzi Express Newspaper**. The advert invited the public to attend the Public Participation Meeting. The advert was published in English on **24 July 2014**. Furthermore, an advert for the draft RMP was advertised on **26 November 2015**. (See attached **Appendix C**).

# 3.5.3.4.3 Flyer Compilation and Distribution

Flyers were also used as a form of notification, they aimed at informing the I&APs about the public consultative meetings. The flyer detailed a brief description of the RMP, meeting date, time, venue and relevant contact details. The flyers were compiled in English and Xhosa and were distributed on **24 July 2014**.

Flyers for the follow up meeting were distributed on **31 October 2014 & 26 January 2015** (See attached **Appendix D**).

# 3.5.3.5 Direct Communication

# 3.5.3.5.1 E-mails

Meeting invitations were sent out to authorities and I&APs notifying them about the scheduled consultative meetings, the invitation entailed the BID, meeting venue and time. The e-mail notification was sent out on **28 July 2014**. Moreover, the meeting invites for the draft RMP were sent out on **16 November 2015**. (See attached **Appendix E**).

# 3.5.3.5.2 Authority Meeting

The initial authority meeting was held on **31** July 2014 at the Mnquma Local Municipality Community Service Boardroom.

The purpose of the meeting was:

- To present the RMP, its goal and 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.

The follow up meeting was held on **09 December 2016 at Ngxalathi Community Hall** (**Amazizi Tribal Authority**).

The draft RMP was presented to the authorities on **16 February 2016**.

# 3.5.3.5.3 Public Meeting

The initial public meeting was scheduled for **31** July 2014 at the Mnquma Local Municipality Town Hall. A platform was also given to I&APs to identify encumbrances/ challenges that might hinder the progress of the RMP as well Table 7: Planning Partners and their Respective Mandates as to identify objectives and vision for the Gcuwa Weir.

The follow up Public Meetings were held on **11 November 2014 & 04 February 2015.** Moreover, the draft RMP was presented on **09 December 2015.** 

#### 3.5.3.5.4 Comments and Responses Register

A copy of the draft report was circulated on **09 November 2015** for commenting. The commenting period was to elapse on **05 February 2016.** (See attached **Appendix F**).

# 3.5.4 Planning Partners

RMPs are developed through a process of cooperative governance and Stakeholder participation. The distinctly different roles and responsibilities of the stakeholders, and their relationship towards each other and the steps in the planning procedure are imperative in the success compilation of the RMP.

The RMP provides for coordination between different governments and agencies to ensure that not only the objectives of DWS are attained, but also the objectives of other relevant Government Departments are attained. Such Departments includes among others as outlined in **Table 7**.

Department/ Agency	Mandate					
Amathole District Municipality/Mnquma	The weir is within the jurisdiction of the municipalities and					
Local Municipality (ADM/MLM)	mandated to provide bulk water services.					
Tribal Authority	The weir is located within an area that is under a leadership of a					
	king.					
	The purpose of DAFF includes sustainable development and management of resources to maximizing the economic potential of the fisheries sector while protecting the integrity and quality of the country's aquatic ecosystems.					
Department of Agriculture, Forestry and Fisheries (DAFF)	Operation Phakisa expansion to inland dams is one of DAFF initiative aimed at unlocking economic potential of fisheries sector within the inland water. The latter programme will be used as benchmark for implementation of conservation policies while implementing job creation within fishery and fish processing market.					
Department of Rural Development and	As part of the RMP process the Department will assist in terms of					
Land Reform (DRDLR)	Land Claims/Ownership issues.					
Department of Environmental Affairs	Responsible for Biodiversity Management within the weir					
(DEA)	including Invasive Alien Species.					

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Department/ Agency	Mandate
Department of Public Works (DPW)	Has the power to regulate and control the use of state land outside the GWWs. In this regard, lease agreements or permits will be required from the department as some of the recreational activities will overlap into the state land.
Department of Transport (DoT)	Responsible for legislation, policy and regulations for all transportation in South Africa, including shipping and other transport by water or sea also inland waterways.
National Treasury (NT)	The use of State assets is governed by National Treasury Regulations, requiring DWS to plan concessions in compliance or association with National Treasury, guided by the Tourism Public Private Partnership (PPP) Toolkit of 2005.
South African Maritime Safety Authority (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.

#### 3.6 RMP DATA ANALYSIS

#### 3.6.1 Encumbrance Survey (Phase 2)

The purpose of the Encumbrance Survey is to investigate/ ascertain whether any encumbrances exist around the weir and other factors that may influence the development and implementation of the RMP. The survey also identifies the information that is required for effective decision-making regarding the RMP (DWAF, 2006). The identified encumbrances will assist DWS to identify hindrances and other factors that may influence the development and implementation of the RMP. The identified encumbrances are broken down into **Biophysical, Legal, Social and Existing Plans.** 

**Tables 8 - 11** outline the summary oflimitations that might affect the developmentor implementation of the RMP for the weir

#### **Table 8:** Summary of Biophysical Encumbrances

Item	Description					
Vegetation	<ul> <li>The study area falls within a Critical Biodiversity Area Class 2, which is near-natural landscape. The biodiversity needs to be maintained in near natural state with minimal loss of ecosystem integrity. No transformation of natural habitat should be permitted.</li> <li>There are sensitive areas with threatened plant species, developments should not take areas at this areas as this will near the disturbance or destruction of the</li> </ul>					
	habitats. (These species are vulnerable and face the threat of being endangered in the near future.). Conservation must be targeted to these species.					
Topography	• Steep gradients can have negative impact on the water quality as a result of increased erosion and surface runoff into the weir.					
торовгарну	• Steep slopes limits land recreational activities and will mostly have to use water surface for recreational activities.					
Geology and Soils	• The soil has a high erodible characteristics and is deposited into the weir causing siltation					
Hydrology	<ul> <li>Siltation has reduced the capacity of the weir by more than 55%.</li> <li>The water quality is poor due to siltation from the Xilinxa Dam as well as surrounding farms. This has major impact on water purification and the aesthetic quality of the weir.</li> </ul>					
	• The weir offers no water based recreational activities such as boating, swimming etc. due to siltation and poor water quality.					

#### **Table 9:** Summary of Legal Encumbrances

ltem	Description				
Land Ownership	<ul> <li>Before any recreational developments could take place outside the DWS purchased boundary, a Land Audit needs to be undertaken to determine the status of the land and the ownership.</li> </ul>				
Agreements	<ul> <li>There's no copy of Memorandum of Agreement (MOA) entered between Mnquma LM and DWS on record regarding the picnic area established within DWS purchased boundary. The legally binding arrangement between the two parties needs to be on record. DWS still needs to draft the agreement.</li> </ul>				

#### Table 10: Summary of Social Encumbrances

Item	Description						
Tourism	<ul> <li>The State Land within the DWS purchased boundary is limited for large recreational developments such as overnight accommodation.</li> <li>The weir has experienced several criminal activities such as vandalism from the local communities. These actions are strong limiting factors for tourism in an ar</li> <li>Safety and security of DWS employees is at risk as crime is highly experience around the weir.</li> </ul>						
Social Audit	<ul> <li>It is unlikely that the population group dominating in Ward 17 has the necessary skills and training to enter into the tourism market. This may be the result of limited environmental education and lack of tourism information relating to the weir.</li> <li>The unemployed group in this region does not have the necessary skills to enter the tourism market hence they may be inactive to participate in the tourism sector.</li> <li>High rate of unemployment in Ward 17 may be accompanied by theft and high crime levels which are strong factors discouraging tourism in an area.</li> <li>Majority residents in Ward 17 will not have received any kind of training to equip them to become active participants in the tourism sector due to the low percentage of the population that have furthered their studies in higher education.</li> </ul>						

#### Table 11: Summary of Existing Plans

Item	Description				
Zoning Plan	• There is no Zoning Plan to be used as a guideline in the overall management of the Gcuwa Weir basin regarding recreation.				
Institutional Planning	• There is no recreational institutional structure for Gcuwa Weir to effectively manage the weir.				

Upon identifying the encumbrances, objectives needed to be identified in order to facilitate a planning procedure aimed at the compilation of a RMP. It is essential to clarify objectives to be met by the planning procedure (DWAF, 2006).

# 3.6.2 SWOT Analysis and Objective Identification

The SWOT Analysis was conducted to gather **Strengths** and **Opportunities** that define the potential of the weir whereas the challenges regarding the weir where identified through **Weaknesses** and **Threats**. The common key objectives were formulated and identified from the **Strengths** and **Opportunities** of the weir. Moreover, the vision for the weir for a period of 20 years was formulated by stakeholders from the identified objectives.

#### 3.6.2.1 SWOT Analysis Approach

There were issues of concerns that were raised in the stakeholder engagement meetings prior to conducting the SWOT Analysis. Other challenges or encumbrances that may hinder the progress of the weir's RMP process were identified by the stakeholders following the SWOT analysis approach as illustrated in **Table 12**.

Table 12: SWOT Analysis for Gcuwa Weir

Strengths	Weaknesses
<ul> <li>The weir is for cultural and farming importance to the surrounding communities.</li> <li>MLM has identified the weir as an entertainment</li> </ul>	<ul> <li>Approximately 40% of the weir is silted and this is caused by amongst other factors soil erosion from surrounding farms.</li> </ul>
MLM has identified the weir as an entertainment and economic hub.	<ul> <li>from surrounding farms.</li> <li>Access control and security is a problem in that Local Communities access the weir at any point.</li> <li>Vandalism of DWS property and recreational infrastructure (braai facilities) is frequent.</li> <li>Purifying water is expensive and a challenge for ADM Water Services Provider (WSP) due to the current quality of the water in the weir.</li> <li>The weir is silted and the siltation limits recreational water based activities such as swimming and boating.</li> <li>The community members are concerned about their land, they think the RMP project aims at taking away their communal land. They are concerned about how they are going to enjoy what the weir has to offer when they are "hungry". The communities hope that the RMP project will bring job opportunities.</li> <li>There are concerns that the RMP project will vanish into thin air just like previous unsuccessful projects.</li> <li>The MLM has plans for shoreline development at Gcuwa Weir, however such plans are threatened by siltation.</li> <li>There are pockets of island visible on the weir even during rainy season.</li> </ul>
	Recurring incidents of drowning.
Opportunities	Threats
<ul> <li>ADM is investigating the possible construction of a pipeline from Xilinxa Dam to Butterworth Water Treatment Works.</li> <li>The development of a Weir Safety Plan to promote safety measures in using the weir for recreational purposes.</li> <li>There are several activities that can be developed at the weir such as private, public functions areas and picnics.</li> <li>The silt in the weir can be essential for communities (e.g. gardening, farming etc.)</li> <li>There is a proposed route by The South African National Roads Agency Limited (SANRAL) to bypass the N2.</li> </ul>	<ul> <li>The weir is silted and if the problem is not addressed the weir will dry out.</li> <li>There are pit latrines or long drop toilet infrastructures at the municipal picnic area and this poses a threat to the weir in case of seepage.</li> <li>In the event of heavy flows from Xilinxa Dam there is a potential flood hazard that poses danger to nearby communities.</li> <li>New road construction may change the hydrological characteristics of the weir.</li> </ul>

#### 3.6.2.2 Objective Identification (Phase 3)

Objectives were identified by all the stakeholders in order to ascertain common goals. These objectives address the following questions:

- What do we want?
- How are we going to achieve this?
- Who will be involved?
- By when would we like to achieve our goals?
- Why would we want to achieve our goals?

The set common key objectives were derived from the SWOT Analysis for the Gcuwa Weir and have been categorized into three (3) Key Performance Areas (KPAs) as illustrated below:

# **KPA 1: Resource Management**

- To improve the water quality of the weir by dredging the silt and utilise it for communal projects or long term investments; and
- To provide equitable and adequate access control at the weir.

#### **KPA 2: Resource Utilisation**

- To have swimming pools next to the weir developed and fenced; and
- To improve safety of navigation through the implementation of standardised and harmonised AtoN and demarcation markers as directed by SAMSA.

# **KPA 3: Benefit Flow Management**

 To uplift the Local Economy and increase benefit flows to the surrounding communities through employment empowerment, skills transfer through environmental education programmes;

- To have an effective and suitable organizational structure that will effectively manage the recreational utilisation of the weir and its surrounding land;
- The weir to be recreationally marketed as it is known to the communities for its primary function for water provision; and
- The weir has been identified as an economic and entertainment hub by MLM.

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

A vision for the weir for a period of 20 years was formulated by stakeholders to be as follows:

"To promote and maintain sustainable utilisation of the water resource and its surrounding environment, also to create recreational developments providing job opportunities linked with skills transfer".

After setting both the weir's specific objectives, a research was conducted in order to provide relevant information to decision – makers regarding the sustainable utilisation of the water resource and where applicable the State Land.

# 3.6.3 Research/ Information Generation (Phase 4)

The aim of undertaking the research process was to collect the relevant data about the weir. The report will serve as a decision-making guideline tool, guided by the objectives set for the weir and any limitations due to encumbrances. The report documents the following data as illustrated in **Figure 16**.



Figure 16: Research Data

The main aim of the research was to identify the weir tourism development potential and also to evaluate the practicability/feasibility of the potential objectives identified.

#### 3.6.3.1 Tourism Development Potential

The weir has been identified as a recreational hub by both the Municipality and the public. The public make use of the braai and picnic area facilities. The Mnquma LM is in charge of the picnic area adjacent to the weir which was established in 2010 World Cup. According to DRPW (2011), Butterworth is the economic hub for MLM and contributes 77% towards the municipality's total Gross Development Product (GDP).

According to Aspire (2013), "The weir is also well positioned to other tourism destinations such as Bawa Falls located to the south of the N2 when entering Butterworth from the East London side. The area is steeped in local history, which includes King Hintsas' kraal and the Great Palace. It is also en-route to the Wild Coast resorts and the Qunu/Mvezo area, which is attracting more and more foreign and local visitors to follow in Mandela's footsteps".

The land around the weir and Butterworth Country Club (golf course) is currently used for low land-use intensity activities. This intervention is concerned with unlocking the recreational value inherent in this land through the establishment of facilities for community entertainment, sporting, and other associated activities (Aspire, 2013).

The Gcuwa Weir development aims to provide a mixed use node, where the focus will be on establishing recreational activities, around the existing facilities – including the weir and the Butterworth Country Club. In addition the area is well located for the development of additional residential units for the middle to upper income bracket. The two activities are seen to be synergistic and are likely to positively impact one another (Aspire, 2013).

The public sector investment in this intervention will involve availing of public infrastructures such as seating areas, bins, etc

for the community. Private sector investment will involve the establishment and operation of a restaurant and conferencing facilities (Aspire, 2013). Middle income housing developed would typically be targeted at the R350 000 – R750 000 price market (Aspire, 2013).

# 3.6.3.2 Feasibility for Identified Potential Objectives

According to DWAF (2006), the feasibility of the proposed objectives needs to be determined in light of the local environmental conditions.**Table 13** shows the practicability of all proposed recreational objectives.

Table 13: Feasibility of Potential Recreational Objectives

	KPA 1: Resource Management				
	Objectives		Status Quo		Practicability
•	To improve the water quality of the weir by dredging out the sand and place it in a safe place for long term investments, communal uses or projects.	•	The weir is heavily silted and this may pose a challenge in introducing water activities such as swimming and boating.	•	A feasibility study needs to be conducted to investigate if the silt can be removed and the appropriate method of removal. DWS recommends to transfer the ownership of the weir to the MLM.
•	To provide equitable and adequate access control at the weir.	•	The weir is not entirely fenced hence the picnic area (not managed by the municipality) and DWS infrastructure are often vandalized. Moreover, there is no access control neither payable access fees.	•	The dam rules relating to the dam access, fees payable for access, safety measures, speed limit applicable to the dam and the time in which the dam will be open to the public should be established in terms of DWAF Regulation R654. The appointment of safety and enforcement personnel is imperative to ensure compliance with the dam rules and other relevant legislations. The Business Plan will incorporate the objective and will include a cost structure that is market related and will be affordable to local visitors and tourists.
			KPA 2: Resource Utilisation		
	Objectives		Status Quo		Practicability
•	To have swimming pools next to the weir developed and fenced.	•	Swimming at the weir is restricted due to silt in the weir and also to promote safety.	•	The DWS's purchased boundary relatively close to the flood line which limits land developments. Developments may be feasible outside the purchased boundary of DWS and this will be outside the scope of the RMP.
•	To improve safety of navigation through the implementation of standardised and harmonised AtoN and demarcation markers as directed by SAMSA.	•	There are no AtoN markers at the weir demarcating the safety and security zone (dam wall).	•	To improve safety of navigation through the implementation of standardised and harmonised AtoN and demarcation markers as directed by SAMSA.

	KPA 3: Benefit Flow Management					
	Objectives	Status Quo			Practicability	
•	To uplift the local economy and increase benefit flows to the Local Communities through employment empowerment, skills transfer through environmental education programmes.	•	<ul> <li>Currently the rate for economically inactive is 57% for Ward 17. The direct positive impact of the study area, is that, it has a large pool of potential labour, should tourism development projects be implemented that are labour intensive.</li> </ul>		The local community to be considered first should there be economic opportunities emanating from tourism developments at the weir.	
•	To have an effective and suitable organizational structure that will effectively manage the recreational utilisation of the weir and it's surrounding.	•	DWS is currently operating the weir and there is no recreation institutional structure in place.	•	MLM to be appointed as an Implementing Agency (IA) for Gcuwa Weir RMP. Ensure that roles and responsibilities of the role players are well defined in the RMP process.	
•	The weir to be recreationally marketed as it is known to the communities for its primary function for water provision.	•	There weir is only known for the picnic area on the eastern side where events such as weddings are hosted.	•	The weir could become a well-known holiday end destination if recreationally marketed. Pictures of the weir and its surrounding can be used as marketing material to local media and internet etc.	

# CHAPTER 4: INTEGRATED MANAGEMENT, ZONING AND INSTITUTIONAL PLANNING (PHASE 5)

The purpose of this phase is to evaluate the information obtained from previous stages to ascertain what could be achieved based on specific constraints and parameters of the various input factors such as biophysical, cultural and socio-economic, current institutional and needs of the weir users. The Integrated Resource Management Plan (IRMP) will take into account the following:

- Biophysical, Cultural and Socioeconomic and User needs constraints;
- Development potential and requirements;
- Site planning and Zonation;
- Programmes and Plans that will unlock the potential of the water resource; and
- Institution options and legal aspects required to create these programmes and plans.

The IRMP is broken down into four (4) main plans namely the **Institutional Plan, Zoning Plan, Strategic Plan** and **Financial Plan** as illustrated by **Figure 17**.

#### **GCUWA WEIR RESOURCE MANAGEMENT PLAN**



#### 4.1 INSTITUTIONAL PLAN

The Institutional Plan provides a framework for the institutional arrangements at the dam. The proposed management systems includes three (3) committees namely; The Dam Management Committee (DMC), Operations Management Committee (OMC) and National Project Steering Committee (NPSC). The appointed management authorities by DWS at the dams, also form part of the institutional structure.

#### 4.1.1 Dam Management Committee (DMC)

DMC refers to any party that is interested or affected by the dam and will assist in raising and addressing issues relating to the weir.

One of the main functions of the DMC is to give support to Implementing Agency (IA) in the management of the dam for recreational purposes. Moreover, to assess commercial opportunities at the dam. As such, an agenda item related to the Strategic Plan for commercialization is required. In addition, changes in water quality, developments in the area, status of Aquatic Invasive Species and education and information programmes should be discussed. The DMC must meet quarterly.

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

- 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 the floating AtoN and demarcation markers are in place and setting times for use of the dam (no recreational activities can take place between sunset and sunrise);
- Conveying the Management Objectives and decisions pertaining to the dam to the relevant stakeholders; and
- Management of the incident management system and wash bays.

**Figure 18** illustrates the proposed user groups that will form part of the DMC.

#### GCUWA WEIR RESOURCE MANAGEMENT PLAN



Figure 18: Proposed DMC

The DMC will have a number of management tools which will enable proper management of the dam in line with legislative requirements.

#### 4.1.1.1 Management Tools

# **Terms of Reference**

The DMC and NPSC will be guided by Terms of Reference (ToR) regarding roles and responsibilities. ToR is not required for the OMC as this is the existing reporting structure. The ToR provide guidance on the following management aspects:

- 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; ٠
- Management of incident management • system and wash bays; and
- Management of AtoN and demarcation Markers.

#### Agreements

One of the main management tool available is the use of agreements to ensure proper use of the dam in line with the RMP vision and objectives.

# Agreements between DWS and Implementing Agency

MLM will be appointed as an Implementing Agency (IA) for the RMP of Gcuwa Weir. MLM and DWS will sign a MOA, which is a legal binding document which will outline the roles and responsibilities and conditions to be followed by

both parties in terms of managing the water resource for recreational use.

# The minimum requirements of an IA include the following:

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

The IA is appointed to manage commercial and recreational use of the dam. This would include the following:

- Management of public access area; ٠
- Management of incident management ٠ system;
- Management of community skills and ٠ training programmes;
- Management of commercial activities (in line with Treasury Requirements); and
- Management of AtoN and demarcation • Markers.

Regardless, all agreements should be in line with the RMP requirements and relevant Legislations and Regulations.

#### Safety of Navigation Agreements

In addition to its common law responsibility, DWS is, in terms of the requirements described in the National Water Act, 1998 (Act No. 36 of 1998), amongst others, responsible for the safety of GWWs and watercourses, including its dams. DWS, its delegated public sector partner, or a delegated water management institution, has therefore the responsibility to provide the required fixed and/or floating Aids to Navigation (AtoN)<sup>3</sup> for general navigation.

<sup>&</sup>lt;sup>3</sup> AtoN refers to any sort of marker which aids the traveler in navigation; the term is most commonly used to refer to

nautical or aviation travel, common types of such aids include lighthouses, buoys, fog signals and day beacons.

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

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

#### Access Agreements

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

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

#### **Event Applications**

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

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

# 4.1.2 Operations Management Committee (OMC)

There is an existing Chief Director: Infrastructure Operations Management Committee (CD: IO MANCO) within Infrastructure Operations which comprises of all directors of four (4) operations (Northern, Southern, Eastern and Central) and is chaired by the Chief Director: Infrastructure Operations within NWRI as illustrated by **Figure 19**.

The committee should meet quarterly discussing matters relating to operations and maintenance of all GWWs. A RMP must be a standard agenda item. Any matters relating to the RMP that are outside the scope of DWS will be escalated to the NPSC.



Figure 19: Existing CD: IO MANCO

# 4.1.3 National Project Steering Committee (NPSC)

NPSC is formed by DWS and is made up of representatives from National Government Departments and Implementing Agencies that are relevant in terms of managing the water resource.

The primary function of the NPSC is to provide guidance on recreational water use in terms of

their respective mandates as well as to ensure that continuous support by different Government Sectors is provided to the dam with the aim of achieving sustainable utilisation of the dam for recreational purposes. The NPSC should meet twice a year. **Figure 20** illustrates a typical example of Governmental Departments that will form part of the NPSC:

#### GCUWA WEIR RESOURCE MANAGEMENT PLAN



Figure 20: Proposed NPSC

The role of the relevant departments forming part of the NPSC is listed below:

#### Centre for Public Service Innovation (CPSI):

The CPSI 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 waterways and to implement responsible water use within the broader socio-economic context of the country.

The CIWSP is a project piloted by CPSI that 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.

# <u>Culture, Arts, Tourism, Hospitality, Sport</u> <u>Sector, Education and Training Authority</u> (CATHSSETA):

CATHSSETA deals with the approval and financing of training relating to culture, hospitality, tourism and sport sectors.

# Department of Agriculture, Forestry and Fisheries (DAFF):

The purpose of DAFF includes sustainable development and management of resources to maximizing the economic potential of the fisheries sector while protecting the integrity and quality of the country's aquatic ecosystems.

Operation Phakisa expansion to inland dams is one of DAFF initiative aimed at unlocking economic potential of fisheries sector within the inland water. The latter programme will be used as benchmark for implementation of conservation policies while implementing job creation within fishery and fish processing market.

# Department of Corporative 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. Other function of the Department is to support Provinces and Local Government in fulfilling their constitutional and legal obligations.

#### **Department of Environmental Affairs (DEA):**

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 Department should ensure that Environmental Impact Assessments is undertaken for all activities that triggers EIA Regulations at the dam. Furthermore, DEA through WfW programme can assist to eradicate alien invasive plants species (Blue Gums and Parrot Furthers) and alien invasive fish species at the dam.

# Department of Public Works (DPW):

DPW has the power to regulate and control the use of state land outside the GWWs. In this regard, lease agreements or permits will be required from the Department as some of the recreational activities will overlap into the State Land, e.g. trail running, biking and running.

# Department of Rural Development and Land Reform (DRDLR):

The Department is tasked with the facilitation of land claims within the country. They are also involved in rural development by improving both economic infrastructure (such as roads, etc.) and social infrastructure (e.g. communal sanitation and non-farming activities).

#### **Department of Sports and Recreation (DSR):**

The Department is mandated to promote and develop sport and recreation activities and also in co-ordination of the relationships between the Sports Commission, national and recreation 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.

#### **Department of Transport (DoT):**

Responsible for legislation, policy and regulations for all transportation in South Africa, including shipping and other transport by water or sea, including small vessels and inland waterways.

#### **Department of Water and Sanitation (DWS):**

DWS through the National Water Act, 1998 (Act No. 36 of 1998) is mandated to protect aquatic and associated ecosystems and their biological diversity as well as to reduce degradation of the water resources. As part of its mandate, DWS initiated the development of RMPs together with the supporting BPs with the aim of ensuring sustainable and equitable development, utilisation and management of GWWs.

#### National Treasury (NT):

The Department is mandated to support the optimal allocation and utilisation of financial resources in all spheres of government. As part of the RMP, The National Treasury Public Private Partnership (PPP) Toolkit for Tourism (2005), will

assist the process of tourism-based businesses development 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, Provincial and Local Government Institutions.

# South African Maritime Safety Authority (SAMSA):

Administers and executes maritime related legislation and regulations, including the National Small Vessel Safety Regulations and ensures standardisation, harmonisation and compliance of all AtoN in South African waters.

#### South African Police Service (SAPS):

The South African Police Service have been entrusted with the responsibility of creating a safe and secure environment for all people in South Africa as well as to prevent anything that may threaten the safety or security of any community.

# South African Sports Confederation and Olympic Committee (SASCOC):

SASCOC is mandated to promote and develop high performance of sports as well as to act as a controlling body for sports in South Africa. It can also assist to coordinate organise events at the dam.

#### 4.2 ZONING PLAN

According to DWAF RMP Guideline DWAF (2006), a site-specific master planning and zoning which describes a framework for the allocation of zones needs to be undertaken based on the results of the Encumbrance Survey and basic Research regarding the Bio-physical, Social and Cultural environment as well as the objectives set by the Stakeholders (refer to section **3.6**).

The proposed Zoning Plan will integrate conservation, recreation and development whilst not retarding the primary functions of the weir

#### 4.2.1 Water Surface Zoning

The water surface zoning provides guidance on permissible and non-permissible recreational activities on the water surface taking into account the biophysical factors of the dam. The Water Surface is zoned as follows:

#### Safety and Security Zone:

It covers a minimum of 100m area from the wall and outlet works indicated by demarcation markers and AtoN. 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 to ensure the safety of the public. This is a no-go zone to the public unless authorised.

#### **Conservation Zones:**

The aim of this zone is to conserve and protect sensitive aquatic habitation at the inlet(s) of the dam. According to Section 12 and 26 of NWA, the existence of these zones is thus not negotiable as it is imperative to protect the water resource for the purposes relating to basic human needs, environmental sustainability and water quality requirements. Access to these areas is generally not allowed due to the following:

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

#### Low Impact Activity Zone:

This zone act as a buffer between High Impact Activity Zones and Conservation Zones. 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, aquaculture and small scale fisheries.

#### High Impact Activity Zone:

This zone has the largest water surface area and is located where the reservoir is at its deepest. 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.

The water surface zoning colour coding means the following:

Colour	Zone Description			
Red Safety and Security Zone				
Green Conservation Zone				
Sky Blue	Low Impact Activity Zone			
Dark Blue High Impact Activity Zone				

Table 14: Proposed Water Surface Zoning Description

	Zone Name	Permissible Activities		Non-Permissible Activities		Recommendation	
•	Safety and Security Zone.	<ul> <li>Alien invasive species clearing.</li> <li>Management of dam infrastructure</li> <li>Management and maintenance activities by DWS and authorised personnel</li> </ul>	•	Public access	•	Area should be demarcated by dermacation makers and AtoN.	
•	Conservation Zone.	• None	•	Public activities (to prevent aquatic habitats disturbance) Water activities due to siltation and for public safety	•	Area should be demarcated by demarcation makers and AtoN. Strict management and control of these areas.	



Figure 21: Proposed Water Surface Zoning Map

#### 4.2.2 Shoreline Zoning<sup>4</sup>

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 and not permissible on the land adjacent to the dam (DWS purchased boundary). The management zones include:

# <u>Safety and Security Zone (dam wall and associated DWS infrastructure):</u>

It is applicable to the area surrounding the dam wall and the outlet works. The extent of this zone is determined by 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 to ensure the safety of the public and surrounding areas. This is a no-go zone to the public unless authorised.

#### Conservation / Low Density Activity Zone:

This zone consists of ecologically sensitive areas and areas with high biodiversity. It also includes the area around the inlets of the dam. Access to this area is limited to low impact activities such as hiking, bird watching, etc. This area is reserved to prevent ecological damage due to development activities hence high impact development not permitted.

#### Medium Density Activity Zone:

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

#### High Density Activity Zone:

This area is reserved 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 livelihood is maintained and improved. Activities include subsistence fishing, livestock watering points, small scale community gardens, etc.

The shoreline zoning colour coding means the following:

Colour	Zone Description				
Red	Safety and Security Zone				
Green	Conservation/ Low Density Activity Zone				
Yellow	Medium Density Activity Zone				
Orange	High Density Activity Zone				
Brown	Community Resource Zone				

 $<sup>^{\</sup>rm 4}$  Permanent structures within the purchase line are not allowed. All developments should be outside 1:100 year floodline.

#### Table 15: Proposed Shoreline Zoning Description

Zone Name	Permissible Activities	Non-Permissible Activities	Recommendation	
<ul> <li>Safety and Security Zone.</li> </ul>	<ul> <li>Fire management</li> <li>Alien invasive species clearing.</li> <li>Management of dam infrastructure</li> <li>Management and maintenance activities by DWS and authorised personnel</li> </ul>	• Public access	<ul> <li>A minimum area of 100m wide downstream the dam wall should be demarcated preventing public access and use.</li> </ul>	
• Conservation/ Low Density Activity Zone.	None	Development	This zone should control access to ecological sensitive areas.	
Medium Density Activity Zone.	<ul> <li>Day visitors</li> <li>Wedding Events</li> <li>Hosting of Party events</li> <li>Municipal events</li> <li>Picnic area</li> <li>Shoreline fishing</li> <li>Braai facilities</li> <li>Ablution facilities</li> </ul>	<ul> <li>Recreational club houses</li> <li>Slipways, Floating Jetties for vessel launching/ mooring</li> <li>Camping</li> <li>Swimming pools</li> <li>Chalets</li> </ul>	<ul> <li>The management of this area should follow the PPP process in terms of National Treasury.</li> <li>All developments must be approved by IA and DWS.</li> <li>Requirements of NWA and NEMA must be taken into account in all developments.</li> <li>Picnicking, shoreline fishing and access to the water must be done in accordance to access agreements.</li> <li>Picnicking is allowed only in designated areas.</li> <li>Noise levels to be kept at a minimum.</li> <li>No littering picnic areas.</li> </ul>	



Figure 22: Proposed Shoreline Zoning Map

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Figure 23: Proposed Overall Zoning Map

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# 4.2.3 Carrying Capacity

The carrying capacity calculations for Gcuwa Weir cannot be calculated as most of water surface activities such as swimming and boating cannot be allowed due to the silt build up and for the safety of the public.

# 4.3 STRATEGIC PLAN

The Strategic Plan is informed by the objectives identified by stakeholders and through research on potential opportunities at the weir. The objectives are broken down

into management fields which are listed below in a format offering ease of reference:

- Objective (What do we want?);
- Motivation (Why do we want to achieve this?);
- Action Projects (How do we achieve this?); and
- Management Support (Who will be involved?).

In **Tables 16 - 18**, the Strategic Plan on how to achieve the identified objectives identified regarding the weir is outlined.

Table 16: Strategic Plan for KPA 1: Resource Management

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)
<ul> <li>Water Quality:</li> <li>To improve the water quality of the weir by dredging the silt and utilise it for communal projects or long term investments.</li> </ul>	The weir has a silt build up and it reduces the capacity of the weir. Moreover, during rainy season pockets of island are visible.	• To desilt the weir and use reuse the soil depending on the quality of the soil.	• DWS with the support of the IA (MLM) and DMC.
<ul> <li>Access Control:         <ul> <li>To provide equitable, compactable and adequate access control at the weir.</li> </ul> </li> </ul>	The weir is not entirely fenced off, the only area that is fenced off is the picnic area managed by the municipality. There is a lack of access control at the weir. People access the weir either by foot or cars at any point allowed by the surface. Furthermore there are no access fees charged due to lack of controlled access.	<ul> <li>Access to the dam must be equitable and safe to all users.</li> <li>Establishment of fence all around the dam to prevent access of criminals to the dam.</li> <li>Appoint gate attendant to monitor dam access point.</li> <li>Establishment of dam rules in terms of DWAF Regulation R654 relating to access to the dam, fees payable for access, safety measures, speed limit applicable on the ring roads around the dam and the time in which the dam will be open to the public.</li> <li>Educate the Local Communities about the importance of safety measures around the dam basin in order to curb vandalism of the dam's properties.</li> </ul>	<ul> <li>IA (MLM) with the support of the DMC.</li> </ul>

#### Table 17: Strategic Plan for KPA 2: Resource Utilisation

	KPA 2: Resource Utilisation				
Objective (What do we want) Motivation (Why do we wan this)		Motivation (Why do we want to achieve this)		Action Projects (How do we achieve this)	Management Support (Who will be involved)
•	To improve safety of navigation through the implementation of	• There are no AtoN markers at the weir demarcating the safety and security zone (dam wall).	•	To improve safety of navigation through the implementation of standardised and harmonised	<ul> <li>SAMSA, DWS with the support of the IA (MLM) and DMC</li> </ul>

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)
standardised and harmonised AtoN and demarcation markers as directed by SAMSA.		AtoN and demarcation markers as directed by SAMSA.	

 Table 18: Strategic Plan for KPA 3: Benefit Flow Management

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)
CommunityParticipationandBeneficiation• To uplift the Local Economy and increase benefit flows to the surrounding communities through employment employment, skills transfer through 	<ul> <li>The rate of poverty and unemployment results to communities becoming less active within the tourism sector. Affordability to tourism facilities may impact the tourism development in an area.</li> </ul>	<ul> <li>Entrepreneurs within the communities should be provided the opportunity to undertake developmental initiatives through the establishment of partnerships and concessions.</li> <li>Strengthen community participation and beneficiation by ensuring that communities are involved in the planning of every projects relating to the weir.</li> <li>Any job opportunities emanating from any developments at the weir should be beneficial to the local communities as well.</li> <li>MLM and ADM should assist in identifying resources to be utilized for environmental education so that environmental programmes can be established and skills to be transferred to the locals.</li> </ul>	<ul> <li>IA (MLM) with the support of DMC to develop a strategy on how to employ Local Communities to job opportunities the weir has to offer (e.g. security personnel, guides, grass cutting etc.).</li> </ul>
<ul> <li>Tourism</li> <li>The weir to be recreationally marketed as it is known to the communities for its primary function for water provision.</li> </ul>	<ul> <li>The weir has been identified as an economic and entertainment hub by MLM.</li> </ul>	<ul> <li>Involve media by inviting them to the weir and afford them the opportunity to view the site, take pictures of the beautiful weir and publish articles about Gcuwa Weir. Also Utilize photos of the weir, its attractive surrounding as marketing material in local newspapers and other media.</li> </ul>	<ul> <li>IA (MLM) with the support of the DMC</li> </ul>

# GCUWA WEIR RESOURCE MANAGEMENT PLAN

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)
<ul> <li>Institutional Plan</li> <li>To have an effective and suitable organizational structure that will effectively manage the recreational utilisation of the weir and its surrounding land.</li> </ul>	• There is currently no institutional structure to oversee the recreational utilisation of the weir.	<ul> <li>MLM to be appointed as an IA.</li> <li>Ensure that roles and responsibilities of the role players are well defined in the RMP process.</li> </ul>	• DWS

#### 4.4 FINANCIAL PLAN

The RMP provides guidance on cost recovery mechanisms to ensure the sustained and improved management of the dam. There are opportunities for PPPs which could further unlock the economic potential of the dam. PPPs allows for DWS to make State Assets such as GWWs available to private parties who wish to engage in tourism related commercial operations (DWAF, 2009). PPPs should be established as per Regulation 16 of the National Treasury.

The weir is a State asset and as such all profits generated from the recreational use, should also be used to further develop the dam. People should not be denied access to the dam. All fees associated with the usage of the dam for recreation should take into account the socio-economic status of the users. The access fees should make a provision for equitable access. The information acquired from the RMP will be used to produce the Business Plan 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 noneconomic 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 Gcuwa Weir RMP. It also describes the financial management and operational requirements to implement the Objectives of the RMP

The BP will include a Financial Plan (FP) which will facilitate the implementation of the RMP by providing implementation program cost estimate for all possible economic recreational activities.

# WAY FORWARD

Once the RMP and its BP are approved by the Minister of Water and Sanitation, it will be published in the Government Gazette as a regulation in terms of Section 26 of the NWA.

#### **Review of RMP**

According to DWAF (2006), the RMP is reviewed and updated every five (5) years to

ensure that the management objectives remains relevant and management actions are continually improved. The BP is updated annually. **Figure 24** illustrates the RMP & BP review framework



Figure 24: RMP and BP Review Framework

# CONCLUSIONS

The RMP documents the challenges that exists within the Gcuwa weir that can significantly impact on the utilisation and management of the weir and it's surrounding for recreational purposes. Such factors include legal, biophysical, socio-economic, hydrological as well as access to the resource. These factors will assist DWS with the most appropriate approach to ascertain that the issues are addressed before the implementation of the RMP.

The RMP will assist in effectively managing the dam and its surrounding environment. Furthermore its function is to implement an Institutional Plan for the effective of dam. management The focus on Institutional Plan is accompanied by a Zonal Plan which provides guidance on potential activities that are allowed on the dam, together with a Strategic Plan. In addition, a Financial Plan will provide guidance on funding

requirements and funding options to implement the objectives of the RMP.

Furthermore the RMP promotes community participation and beneficiation, through Stakeholders engagement which were conducted to obtain common key objectives to be met by the RMP. The vision for the weir was formulated from the key common objectives identified by Stakeholders. Based on the strategic objectives identified for Gcuwa Weir, a BP has been developed to describe a manner in which the potential recreational activities are to be financially resourced. Furthermore, by including the RMP in the Local Initiatives such as IDPs, LED, etc, can ensure effective cooperative governance as well as to provide necessary support with regards to the use of weir for recreational purposes. Undertaken in this manner, it is believed that the potential of the water resource can be optimally unlocked in a sustainable and equitable manner.
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## APPENDICES