PROJECT NAME:

DEVELOPMENT OF AN ENVIRONMENTAL MANAGEMENT FRAMEWORK

REFERENCE NO:TENDER NO. 28/2023-2024T

REPORT TITLE:

ENVIRONMENTAL MANAGEMENT PLAN (DRAFT)

DATE: 01 APRIL 2025

PREPARED BY:

ABANTU ENVIRONMENTAL SERVICES (PTY) LTD

PREPARED FOR:

SENQU LOCAL MUNICIPALITY

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EXECUTIVE SUMMARY

The Senqu Local Municipality (SLM) is developing an Environmental Management Framework (EMF), specifically an Environmental Management Plan (EMP) as per the requirements of the National Environmental Management Act (107 of 1998). The purpose of the Plan is to provide the municipality with a comprehensive picture of the status of the environment and give strategic direction and structure for addressing environmental problems, and identify opportunities concerning environmental matters, especially related to natural resources management. The EMP must be endorsed by the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), thereafter approved by the Senqu Municipal Council and thereafter incorporated into the municipal Integrated Development Plan (IDP).

The technical development of an EMP consists of the three main phases *viz*:

- Status quo assessment
- Desired state of the environment and
- Way forward - compilation of the Plan/Framework (this document) as informed by the above chapters, and development of an action plan and budget for implementation of the Plan.

A Status Quo Analysis is a critical exercise that involves a comprehensive assessment of the current environmental, socio-economic, and institutional conditions within the municipality. The primary objective of the analysis was to establish a detailed baseline understanding of the existing state of the environment and other related factors, which serves as the foundation for all subsequent phases of the EMP. A summary of key findings from the SQA informed by desktop research, environmental sensitivity analysis, groundtruthing and stakeholder consultations and surveys;

From the SQA, the fundamental gaps of the this EMP are identified as follows:**Legal, compliance enforcement and policy context**

- **Issue 1:** Lack of environmental management by-laws
- **Issue 2:** Lack of environmental education and awareness
- **Issue 3:** Lack of environmental compliance enforcement
- **Issue 4:** Unmapped business activities, thus, unknown environmental impacts and aspects e.g. parlours and farmers
- **Issue 5:** Lack of an EMP

1. Institutional functioning

- **Issue 1:** Under human resourced environmental function within the Community Services Department
- **Issue 2:** Non- Water Services Authority (WSA) municipality
- **Issue 3:** Lack of Memoranda of Understanding with academic and research institutions to assist with environmental advisory and ongoing environmental monitoring
- **Issue 4:** Prolonged procurement of environmental advisory and related services

2. Climate, Climate Change and Environmental Extreme Events

- **Issue 1:** Climate information and disaster management
- **Issue 2:** Flooding incidents data
- **Issue 3:** Drought preparedness
- **Issue 4:** Municipal climate change mitigation and adaptation strategy

3. **Land degradation and road side slope rock instabilities**
    - **Issue 1:** Soil erosion land degradation information and initiatives
    - **Issue 2:** Geological stabilities hotpots
    - **Issue 3:** Illegal mining

4. **Biodiversity and alien invasive species**
    - **Issue 1:** Lack of fine scale vegetation and or biodiversity information
    - **Issue 2:** Biological Invasions
    - **Issue 3:** Municipal scale land use/cover change monitoring

5. **Surface water resources management**
    - **Issue 1:** Improved wastewater management strategies to address the various water quality issues within the municipality
    - **Issue 2:** Encroachment of formal and informal development into watercourses encroachment
    - **Issue 3:** Erratic rainfall patterns and need for intensified rainwater harvesting methods

6. **Groundwater resource management**
    - **Issue 1:** Municipal groundwater development
    -
7. **Socio-economic status quo and livelihoods**
    - **Issue 1:** Renewable energy sources utilization
    - **Issue 2:** Water Conservation

8. **Solid waste management**
    - **Issue 1:** Inadequate waste disposal methods
    - **Issue 2:** Unsound management of landfill sites as well as unlicensed landfill sites
    - **Issue 3:** No solid-waste management policy nor by-laws

9. **Archeological, Cultural and Heritage resources management**
    - **Issue 1:** No centralized municipal heritage repository

Based on the findings of the SQA , this report has been developed to serve as a strategic tool for promoting sustainable development both throughout the municipality and for specific developmental and economic programs. In this context, the EMP is the foundation for responsible decision making and management of ecological and cultural resources

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS

ACRONYM	DEFINITION
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DFFE	Department of Forestry, Fisheries and the Environment
DWA	Department of Water Affairs
DWS	Department of Water and Sanitation
EMF	Environmental Management Framework
EMP	Environmental Management Plan
I&APs	Interested and Affected parties
MEC	Member of the Executive Council
EAP	Environmental Assessment Practitioner.
IDP	Integrated Development Plan
IEM	Integrated Environmental Management.
NEMA	National Environmental Management Act.
NEMAQA	National Environmental Management Air Quality Act
SAHRA	South African Heritage Resource Agency
SDF	Spatial Development Framework
SLM	Senqu Local Municipality
SQA	Status Quo Analysis

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

The Senqu Local Municipality (SLM) is developing an Environmental Management Framework (EMF), specifically an Environmental Management Plan (EMP) as per the requirements of the National Environmental Management Act (107 of 1998). The purpose of the Plan is to provide the municipality with a comprehensive picture of the status of the environment, and give strategic direction and structure for addressing environmental problems, and identify opportunities concerning environmental matters, especially related to natural resources management. The EMP must be endorsed by the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), thereafter approved by the Senqu Municipal Council and thereafter incorporated into the municipal Integrated Development Plan (IDP).

1.1 EMP NEED AND PURPOSE

The EMP is a planning tool that is needed to:

- Provide a vast array of information which becomes useful in a diverse field of environmental application
- Source of information and maps illustrating attributes of the environment for a specific geographical area
- Ensure that environmental limits to developments are included in spatial planning documents.
- .
- Inform decision making such as inputs into the Spatial Development Framework (SDF) and Integrated Development Plans (IDP).
- Achieve ecological balance by utilizing early identification and mapping of sensitive ecosystems and resources to assist in pre-empting potential future land use conflicts

The framework is one of the tools that are integral to in the pursuit of sustainable development.

1.2 GUIDING PRINCIPLES OF AN EMP

The following principles are applied in the development of this EMP (EMF Regulations 2010):

- It is customized to the context of the municipality
- Considers reference to municipal environmental goals and priorities;
- Enshrines sustainable development;
- The scope is comprehensive enough to provide assistance to all levels and types of environmental and planning decision-making in the area;
- The EMP should be clear and easy to understand;
- The process must provide for an appropriate level of public participation and
- The process should be carried out fairly, impartially, and professionally, having regard to the legal and policy requirements as well as guidelines that are applicable to the area.

1.3 CONTENTS OF AN EMP

The NEMA Regulations **(Act 107 of 1998) Section 13** outlines the minimum requirements for an EMP. These requirements have been included in **Table 1** below along with a description of how this requirement has been met and details of where in this report that relevant information is located.

Table 1. EMP contents alignment to the regulations.

EMP REGULATIONS SECTION	SECTION IN THE EMP
(a) A description of the functions exercised by the relevant department in respect of the environment;	Section 8
(b) A description of environmental norms and standards, including norms and standards contemplated in section 146(2)(b)(i) of the Constitution, set or applied by the relevant department;	Section 2
(c) A description of the policies, plans and programmes of the relevant department that are designed to ensure compliance with its policies by other organs of state and persons:	Section 2
(d) A description of priorities regarding compliance with the relevant departments' policies by other organs of state and persons;	Section 8
(e) A description of the extent of compliance with the relevant departments policies by other organs of state and persons;	Section 2
(f) A description of arrangements for co-operation with other national departments and spheres of government, including any existing or proposed memoranda of understanding entered into, or delegation or assignment of powers to other organs of state, with a bearing on environmental management; and	Section 7
(g) Proposal for the promotion of the objectives and plans for the implementation of the procedures and regulations referred to in Chapter 5 of NEMA.	Section 6

2. LEGAL FRAMEWORKS

It must be noted that the national policies and legislation governing both municipal level services and responsibilities, as well as the use and management of natural resources such as water which sustain many of these services, are well developed and comprehensive, and the onus for compliance lies with local authorities and the communities in their jurisdiction. Water service provision in particular is the responsibility of the District, and DWS is a guide and authorization authority, with an important regulatory and 'watchdog' function. Waste management is also an important basic service, and is not as well recognized or 'institutionalised' within the District as the often more urgent issue of water supply. The status quo report includes an outline of relevant legislation pertaining to environmental planning and management for the municipality.

3. APPROACH AND METHODOLOGY

The requirements of the DEA (now DFFE) (2010) Environmental Management Frameworks in terms of the EMF Regulations of 2010, Integrated Environmental Management Guideline Series 6 for the Development of EMFs were used to guide the development of this EMF.

According to the Guidelines, the technical development of an EMF consists of five main phases which are described in **Table 2** below.

Table 2. Shows the fives phases in the technical development of an EMF.

PHASE	KEY ACTIVITIES
Status quo assessment	• A comprehensive analysis of the current environmental, socio-economic, and institutional state within the municipality. • Involves data collection, field surveys, and the assessment of existing environmental resources, land use patterns, and socio-economic factors • This involves assessing the specific environmental issues, risks, and opportunities within the area of concern • Early engagement with key stakeholders, including government agencies, local communities, NGOs, and industry representatives, is critical. This activity involves gathering input on the perceived need for an EMF, understanding stakeholder concerns, and ensuring their support and participation throughout the EMF development process. • Involves reviewing existing environmental management policies, regulations, and frameworks at the local, regional, and national levels. • Based on the identified needs and stakeholder input, the scope and specific objectives of the EMF are defined. This includes determining the geographic boundaries of the EMF, the key environmental components to be managed, and the specific goals the EMF aims to achieve (e.g., protecting sensitive ecosystems, guiding sustainable development, etc.).
Desired state of the environment	• Involves setting the desired environmental outcomes or goals for the municipality, based on the findings from the status quo analysis. • The desired state represents the optimal environmental conditions that the EMF aims to achieve. • A gap analysis is then conducted to identify the discrepancies between the current state and the desired state. • This phase also involves identifying key environmental management priorities and developing strategies to address the gaps.
Way forward	• This stage entails the development of a programme with specific costed projects for implementation by the municipality and relevant role players.
Project Close-Out Report	• This report includes a review of the project's objectives, the methodologies used, key findings, stakeholder engagement processes, and lessons learned. The close-out report also provides recommendations for future environmental management and monitoring activities, ensuring that the EMF's objectives continue to be met over time.

3.1 STATUS QUO ASSESSMENT

3.1.1 OVERVIEW

An assessment of the status quo is the initial cornerstone exercise for EMF development. The assessment entails a description of environmental attributes and features and an establishment of the current status. The exercise unravels the importance and interrelationships between the different attributes in the context of the municipality. A description of issues and trends for each attribute is provided. In order to ensure that the end product is pragmatic and scientific, information is translated into categories of similar and or related characteristics.

The status qua analysis has been compiled to ensure that it:

- Specify environmental attributes in the area, including sensitivity, extent, interrelationship and significance of the attributes.
- Unravel their sensitivity (conservation status), extent, interrelationship and significance
- Indicate negative and positive significant impacts developments types and or land uses on the environmental attributes
- Provides a summary of findings, identification of development pressures, trends and needs, information gaps and opportunities

3.1.2 PRE-COMPILATION CONSIDERATIONS

It is informed by reliable data sources in its literature and geospatial aspects. The data and information utilized considers the following:

- Reliable sources must be consulted
- Most recent publications to be consulted. Old reports older than 5 years to be consulted only when necessary
- All information source must be cited and references
- All publications to be saved and renamed with the appropriate names
- All other environmental data managed through the use of an environmental metadata matrix

3.1.3 STAGES OF THE PROCESS

A 4-staged process has been implemented to build this SQA report namely (see **Figure 1**):

- Desktop analysis consisting of literature review and GIS analysis
- Stakeholder notices and interviews to obtain municipal specific environmental issues
- Site visits and groundtruthing key environmental areas
- Stakeholder (PSC & other I&APs) comments and inputs on the draft report

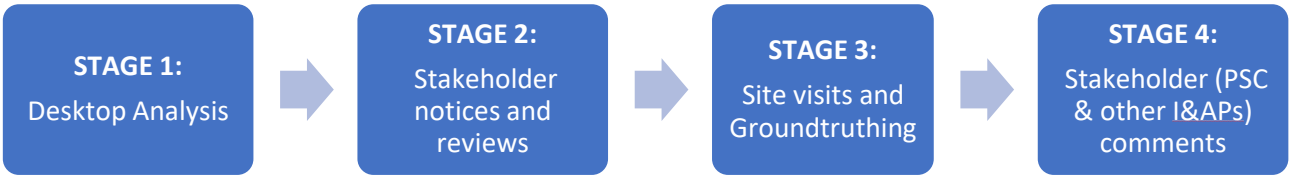

Figure 1. Process implemented to build the SQA report.

Figure 2 below outlines the key processes during a status quo assessment, underpinned by comprehensive desktop reports, specialist assessments which are informed by ground-truthing, and policy and statutory provisions.

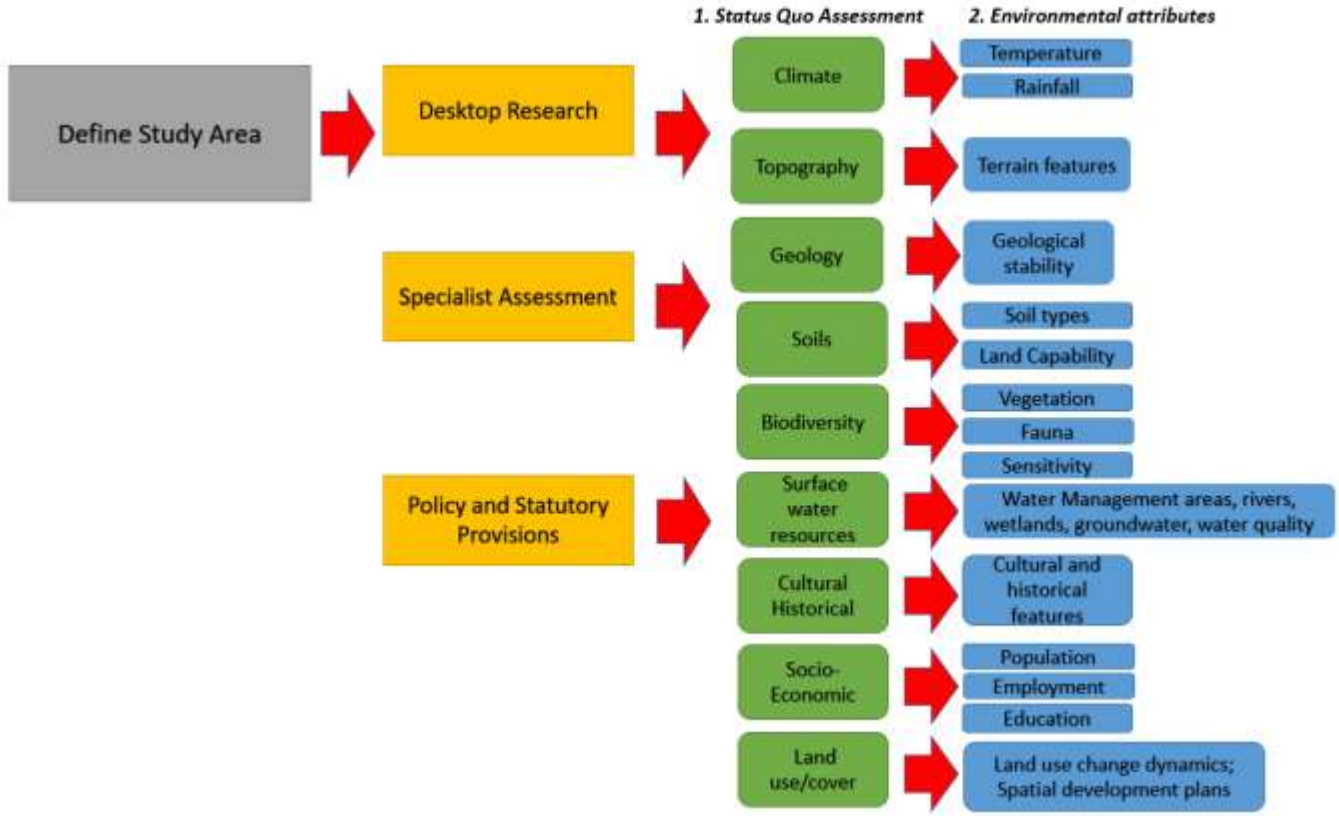

Figure 2. Status Quo Assessment flow diagram.

3.2 DESIRED END STATE AND NEEDS AND GAPS

The desired end state of the environment shall emanate from the analysis and evaluation of the baseline / status quo information which shall provide the basis for establishing environmental priorities. The Desired State of the Environmental shall underpin the development of management guidelines and strategic objectives of the EMP. The Gap Analysis shall then conclude with the identification and description of the issues, gaps, and needs, the setting of goals and objectives (short, medium and long-term) for the EMP. The chapter shall include but not limited to:

- vision for the desired environmental state
- gap analysis between current and desired environmental state
- identification of key challenges and environmental issues
- recommendations for addressing gaps (goals and objectives)

  Goals and objectives are used to address any potential shortcomings or necessary improvements identified within the current environmental management system.

  Goals are long term aspirations for environmental management, long term desired result which can be accomplished through various projects. Goals are not necessarily measurable but instead present a long-term desired end state for the municipality.

  Objectives are more focused, measurable targets which, if implemented correctly, will allow the municipality to reach the identified goals. Measurable outputs which, once completed, will contribute to the accomplishment of a goal. Objectives will have deadlines to drive their implementation.

3.3 ENVIRONMENTAL MANAGEMENT PLAN

The functionality of an EMF is largely dependent on the implement ability of the recommendations made in the programme . After the assessment of inputs from the public participation process and information gathered from the various assessments; a pragmatic programme can be developed. These provisions and guidelines should be informed by the opportunities and constraints which have been identified and should aim to:

- Integrate the outcomes of the desired state of the environment,
- Clearly define and address all objectives which have been established and identified through the development of the desired state of environment,
- Maximise the opportunities to the benefit of both the environment and development in the area;
- Make clear recommendations regarding the way environmental management matters of the municipality should be addressed.
- The EMP and its programme can also be used as the environmental input for the IDP processes.

3.4 STAKEHOLDER ENGAGEMENT STRATEGY

The Public Participation Process (PPP) conducted for this project, conforms to the minimum requirements of Chapter 6 of the EMF regulations, in particular sub-regulations 2 (c) stipulating that:

An EMF must be made available for public comment.

Potential Interested and Affected Parties (I&APs) must be invited to comment on the development of the EMF as well as the Draft EMF. Invitation should be by means of advertising in newspapers and any other appropriate ways

Reasonable means to be implemented to engage with I&APs which are illiterate, disabled and have any other disabilities;

- Consider representations and comments
- To review the draft report to include relevant comments
- Prepare a comments and response report

This EMF report adopted the following public participation strategy in line with Regulation 6.2 of the EMF Regulations:

3.4.1 PHASE 1: -PRE-EMP (PREPARATION)

- An initial meeting with the regulatory authorities that have jurisdiction in the area was held on the 7 August 2024. Minutes of the meeting are attached as **Appendix 1**.
- The compilation of a preliminary database of potential I&APs
- Preparation of the documentation
- A background information document (BID)
- Project advertisement in a provincial newspaper
- Invitations to attend the initial public meetings as well as agendas for the meetings

3.4.2 PHASE 2: STAKEHOLDER CONSULTATION

- As a minimum, interactions (presentations, focused groups, interviews with local leaders and councils) be done at the following milestones:
    - During information gathering
    - Status quo assessment completion

      Stakeholder engagements (03.10.2024)
        - Director - Community Services
        - Town Planning - Yolisa Macala
        - Olwethu Zihle – PMU & Technical Services
        - Sixolile Foyile – PMU & Technical Services
        - Mxolisi Salmani – Manager: Solid Waste Management
    - Desired state of the environment and draft plan

3.4.3 PHASE 3: PUBLIC REVIEW AND REPORTING

- Occurs during EMP finalization, involves soliciting comments on the draft EMP
- Regulatory 30-day review and comment period
- Thereafter compilation of a Comments and Response report

4. OVERVIEW OF THE MUNICIPALITY

Senqu Local Municipality is located in the Joe Gqabi District of the Eastern Cape Province, South Africa (see **Error! R eference source not found.** and **Error! Reference source not found.**). The municipality spans approximately 7329 Km^2 between coordinates 30°40' S and 27°30' E (Joe Gqabi District Municipality, 2017). The municipal population is estimated to 147 073 people and a population density of 18.5 people per square kilometer (Stats SA, 2022). Major towns and settlements within the municipality include Barkly East, Lady Grey, Sterkspruit, and Rhodes (Senqu Local Municipality, 2023).

The region experiences a temperate climate with distinct seasons, including cold winters and occasional snowfall in higher altitudes (Senqu Local Municipality, 2023). In accordance with the South African National Standard (SANS 204-2), the municipality falls under the Cold Interior climatic region, with some parts of the municipality invading the Temperate Interior climatic region (Conradie, 2012). Temperatures in this municipality vary tremendously, whereby temperatures can reach approximately 42°C in summer and – 16°C in winter (Senqu Local Municipality, 2023). Rainfall on the other hand ranges from 1000mm to 1400mm in the eastern sections, whilst southern, western, and northern areas experience a reduce amount of rainfall equating to 600mm annually. Rainfall intensity is also directly proportional to the elevation above sea level, meaning areas situated at high altitudes such as at peaks of mountainous areas likely experience higher rainfall than areas located in low altitude areas such as valleys (Senqu Local Municipality, 2023). Snow also occurs sporadically within the region, specifically in the northern areas of the municipality.

The topography is characterized by mountainous terrain, notably the Drakensberg Mountains, and features varied landscapes including valleys, plateaus, and rivers (Senqu Local Municipality, 2023). The highest points within the municipality are found in the eastern sections. An epitome of this is the Ben MacDhui, which is recorded as the highest point within the municipality and the Eastern Cape combined (Senqu Local Municipality, 2023). The municipality is also characterized by very steep slopes (approximately 1:8), which is the main reason for the erosion issues experienced in the area.

The local economy is primarily centered on agriculture, dominated by livestock farming (sheep and cattle) and crop production (maize and potatoes). Tourism is also a vital economic sector, drawing visitors to the region's scenic landscapes, heritage sites, and outdoor activities such as hiking, fishing, and skiing. Although there are some mineral resources such clay, sand, stone, and aggregates, mining activities are limited (Council for Geoscience, 2020; Eastern Cape Provincial Government, 2021). Employment is heavily reliant on agriculture, government services, and tourism (Senqu Local Municipality, 2023).

Infrastructure in the municipality includes a mix of tarred and gravel roads connecting major towns and rural areas, with minibus taxis serving as the main public transport mode. Utilities such as water supply and electricity are widely available, though some rural areas still face challenges such as lack of power supply, adequate sanitation facilities such as a piped sewer system, septic tanks, piped domestic water to name a few. Sanitation services vary from sanitation infrastructure which is primarily characterized by a mix of pit latrines, VIP (Ventilated Improved Pit) toilets, and flush toilets connected to septic tanks or the municipal sewer systems (Eastern Cape Provincial Government, 2021; Senqu Local Municipality, 2023). In urban centers like Lady Grey and Sterkspruit, there is access to waterborne sanitation systems, with ongoing efforts to improve infrastructure. The region hosts primary healthcare clinics and district hospitals, although resources are often stretched. Educational facilities range from primary and secondary schools to some tertiary education and vocational training centers.

Environmentally, the municipality is rich in biodiversity with numerous endemic species of flora and fauna, including important bird areas and wetlands (Eastern Cape Biodiversity Conservation Plan (ECBCP), 2017; Eastern Cape Provincial Government, 2021). The Eastern Cape Biodiversity Conservation Plan (ECBCP, 2017) highlights that the region includes grasslands with species such as *Themeda triandra* (red grass), which is common in the high-altitude areas. Additionally, the area supports several medicinal plants used by local communities, including *Pelargonium sidoides* and *Aloe ferox*. The Drakensberg Mountains serve as a habitat for various bird species, mammals, and amphibians. The region is particularly important for birdlife, with several species of conservation concern present (ECBCP, 2017), including the endangered Bearded Vulture (*Gypaetus barbatus*) and the Cape Vulture (*Gyps coprotheres*). These species rely on the mountainous terrain for nesting and foraging. Mammals in the area include species such as the Mountain Reedbuck (*Redunca fulvorufula*), Grey Rhebok (*Pelea capreolus*), and various small carnivores. The presence of rivers and wetlands in the region also supports amphibian species like the Drakensberg Frog (*Strongylopus hymenopus*), which is endemic to the area. Protected areas include nature reserves and conservation zones that require careful management. Major rivers such as the Senqu (Orange) River and the Kraai River are key water resources, supporting both local and downstream water supply needs.

Governance in the municipality is managed by a municipal council with elected representatives, and the area is divided into wards, each represented by a councilor. The Integrated Development Plan (IDP) outlines the municipality's strategic development goals. Despite its natural and economic assets, the municipality faces significant socio-economic challenges, including high levels of poverty and unemployment, particularly in rural areas, and issues with consistent and adequate public service delivery. Environmental management pressures include soil erosion and land degradation, agricultural expansion, informal settlements, and climate change impacts. The pressure for soil erosion originates from the fact that the municipality's terrain is characterized by steep slopes and highly erodible soils, making it particularly vulnerable to land degradation and soil erosion (Senqu Local Municipality, 2023). Overgrazing, poor agricultural practices, and deforestation also contribute to the loss of topsoil, which not only reduces agricultural productivity but also leads to siltation of rivers and dams (Nde et al., 2019; Senqu Local Municipality, 2023). This erosion is especially severe in the mountainous areas, where the removal of vegetation cover accelerates the degradation process (Nde et al., 2019; Eastern Cape Provincial Government, 2021; Senqu Local Municipality, 2023).

The establishment of informal settlements has also poses as an environmental pressure, particularly through land degradation, habitat loss, water pollution, and biodiversity threats (Mtsamayi and van Niekerk, 2022). These settlements have often arisen on ecologically sensitive lands, leading to soil erosion and the destruction of natural habitats. Additionally, the lack of proper sanitation and waste management has contributed to water contamination and the depletion of local resources, further straining the environment. The expansion of these settlements also threatens local ecosystems and biodiversity, highlighting the need for sustainable urban planning and improved infrastructure to mitigate these impacts.

Lastly, climate change has increasingly impacted the municipality, with erratic in rainfall patterns, increased frequency of extreme weather events, and rising temperatures (Eastern Cape Provincial Government, 2021). These changes are likely to exacerbate existing environmental pressures, such as soil erosion, water scarcity, and biodiversity loss. The agricultural sector, which many residents depend on, is particularly vulnerable to these climate-induced changes, affecting food security and economic stability.

However, there are numerous opportunities for development. Sustainable agricultural practices and value-added agricultural products could enhance the agricultural sector. Tourism promotion leveraging the region's natural and cultural heritage can drive economic growth. Renewable energy projects, particularly solar and wind, present significant potential, and investments in infrastructure improvements—specifically in road, water, and sanitation—can support overall development. This background information provides a comprehensive overview, setting the context for the municipal EMF.

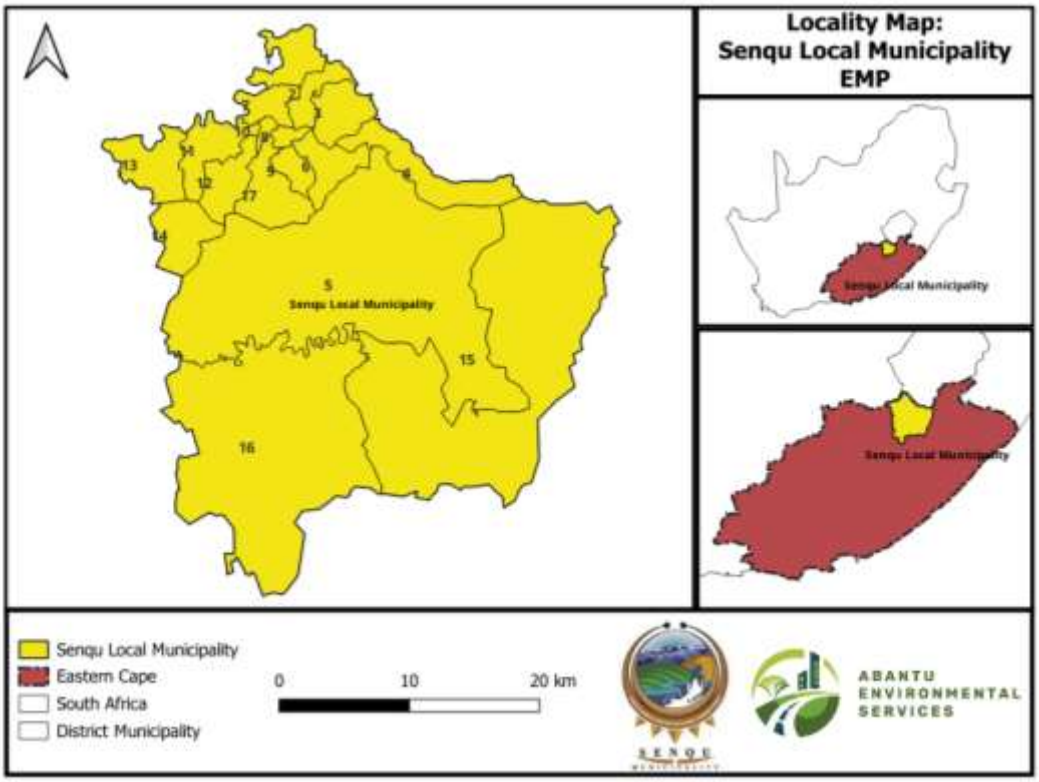

Figure 3. Locality map of Senqu Local Municipality.

Table 3 below presents the general profile of the municipality, specifically spatial coverage, category, number of wards, district, province, and the number of departments the municipality has.

Table 3. Senqu Local Municipality Profile.

ATTRIBUTE	INFORMATION
Institution	Senqu Local Municipality
Size	7 329 km^2
Category	Category B
Wards	19
District	Joe Gqabi
Province	Eastern Cape
Departments	• Community Services • Corporate Services • Town Planning • Technical Services • Finance

5. STATUS QUO ANALYSIS SUMMARY

A summary of key findings from the SQA informed by desktop research, environmental sensitivity analysis, groundtruthing and stakeholder consultations and surveys.

CLIMATE AND CLIMATE CHANGE

- The weather patterns of the municipality come with impacts on the environment such as floods, droughts and veld fires.
- The municipal area is vulnerable to climate change and necessitates the municipality to have a climate change adaptation and mitigation strategy including similar plans

LAND DEGRADATION AND SLOPE INSTABILITIES

- The topography of the municipality is extremely mountainous with very steep slopes rendering some areas predisposed to rockfalls, particularly along road cuts.
- Soil erosion is a serious problem exacerbated by terrain-soil dynamics. The overgrazing and overstocking activities happening in the municipality also influence soil erosion.
- Soil erosion is major problem in this town as it also affects the Lady Grey's dam capacity through ongoing siltation.
- The municipality needs to identify areas that need intervention to curtail land degradation in such as areas including utilization of existing programmes such as Working for Land and Working for Water, amongst others whose main objectives include but not limited to; restoration and rehabilitation of degraded land, to mitigate loss of topsoil and to control soil erosion.

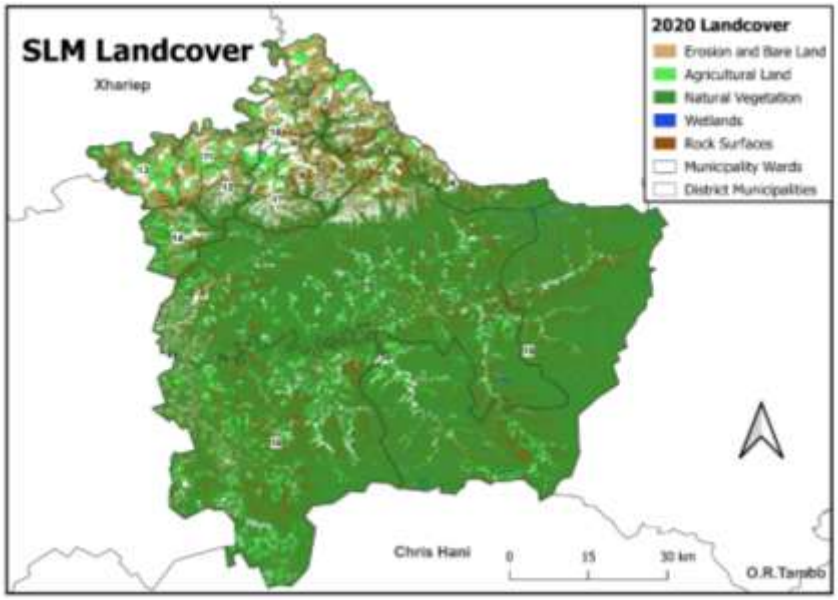

Figure 4. Land use/cover map of the municipality

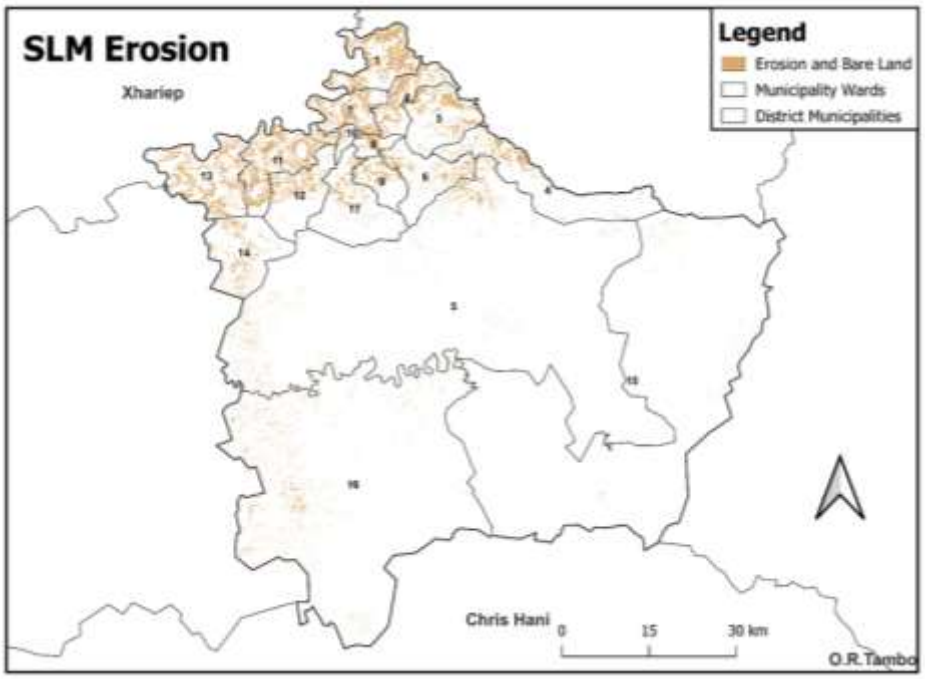

Figure 5. Land degradation/erosion map

BIODIVERSITY

- The municipality is rich in biodiversity but, currently facing habitat degradation.
- The key pressures that contribute to loss of biodiversity or habitat degradation are:
    - Overgrazing
    - Agricultural expansion and
    - Infrastructure development
- The key pressures are characterised by the removal of natural vegetation and destroying of fauna and flora habitat.
- Alien invasive plants are also problematic in the municipality
- Lady Grey has high frequent vegetation growth and biomass yield.

SURFACE WATER

- The water quality for surface water in the municipality is not in a good condition, recent assessments by DWS shows an exceed of recommended limits for parameters such as nitrate, phosphate, dissolved oxygen and E.coli.
- The state of the rivers and streams in the municipality are largely affected by agricultural runoff and waste water discharges.
- Based on the status of the rivers and streams, the municipality require water management strategies to address the water quality issues in the municipality.
- Water yields have generally decreased due to prolonged drought periods and reduced rainfall.
  Intensification of rainwater harvesting methods
- Sterkspruit has a high population density, with a large number of poor residents living close to rivers and stream, this affects water quality of the water resources

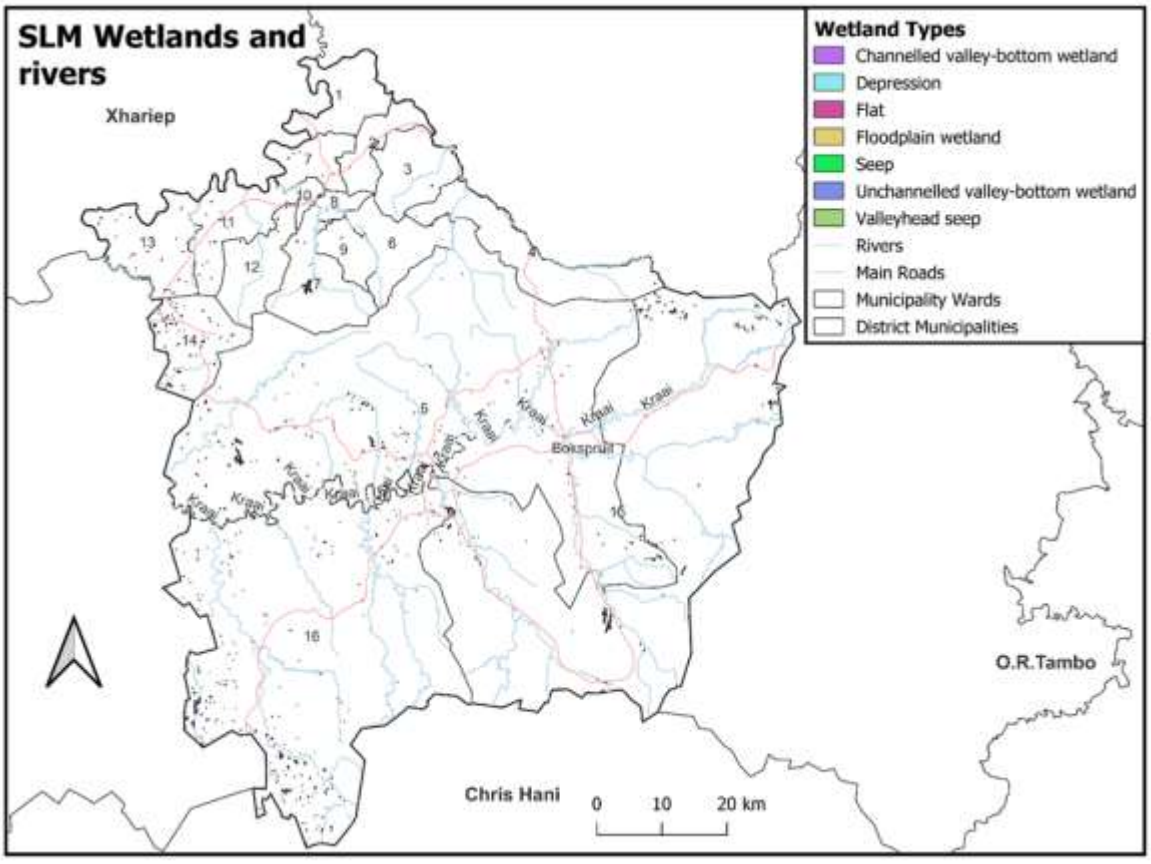

Figure 6. Surface water resources map

GROUNDWATER

- Boreholes or springs are a primary source to areas that do not have access to surface water resources, and used during droughts in urban areas.
- A number of villages in Sterkspruit use groundwater.
- The district municipality has no data for yields and quality data for boreholes (Joe Gqabi DM Water Services Development Plan, 2022/2023).

WASTE MANAGEMENT

- The landfill sites are not fenced, there are no plants or equipment available to properly place, cover and compact the waste and the landfills are not managed according to the legislation.
- The municipality is facing a problem of medical wastes being dumped illegally to landfill sites, as there is no facility to drop of hazardous waste.
- The municipality also has no waste policy and by-laws in place.
- Waste awareness initiatives are currently not being practiced in the municipality, having these initiatives would assist in achieving sustainable waste management

ATMOSPHERIC SETTING

- Sources of air pollution in Senqu Municipality come from vehicular emissions, dust from unpaved roads, veld fires, agricultural practices and small industrial businesses.
- The burning of veld contributes the majority of emissions in the municipality.
- The air quality in the municipality is within acceptable limits of the South African National Standards (SANS) and World Health Organisation (WHO).

CULTURE AND HERITAGE

- The municipality is rich in heritage, although this is documented, a local repository in text, artifacts and geospatial formats shall be important to preserve and conserve these important environmental resources for the present and future generations.

MUNICIPAL INFRASTRUCTURE

- The state of the bulk services infrastructure in the municipality, such as wastewater treatment works, are not at its best state or ability to function effectively and have serious negative environmental impacts
- The state of wastewater treatment works is a major challenge and waste disposal sites are not operating optimally, and contributes to environmental pollution.
- Lack sludge management plans
- There is a drinking water purification deficiency occurring in the municipality, necessitating the community to have to purchase drinking water.
- In some areas the infrastructure needs to be upgraded or replaced, with pit latrines still being widely used within the municipality.

SOCIO-ECONOMIC ATTRIBUTES

- More pit latrines and sewer system dependency – implications and impacts for surface and groundwater pollution
- Over the past 26 years the municipality has registered, results reveal an increase in flush toilets connected to sewerage – trend supporting the above
- High number of people who utilise their own dumping methods – pollution and contamination implications and impacts and illegal disposal of waste
- High dependency of electricity mainly coals produced electricity – contributions of greenhouse gas emissions. Considerations for more clean energy sources to supplement the existing grid
- Population and households have been increasing since 1996 to 2022
- An increase in formal dwellings and electricity for lighting – urban development expansion and linked environmental impacts e.g. RDP houses spikes
- A decrease in traditional dwellings, pit toilets and own refuse dumps has been occurring in the municipality – lesser associated environmental impacts

LEGAL, COMPLIANCE ENFORCEMENT, POLICY AND INSTITUTIONAL CAPACITY

- Human resource capacity constraints are assessed as the municipal WMO fulfills a dual role for waste and environmental management.
- Over-resourcing and potential environmental management performance unfavorable impacts may arise, necessitating the need for additional, competent and qualified personnel in the municipal organogram, specifically for the responsible department.

- The municipality has existing plans and guidelines, however, by-laws relating to environmental management and health are non-existent and these are integral to ensuring and enforcing compliance on municipal specific issues and matters.
- Funeral parlors and farmers are operating at sub-standard environmental standards with their run-off/discharge impacting the environment and watercourses.
- There is a lack of a business register that can keep track of and understand potential aspects and impacts on the environment imposed by said businesses.
- Borrow pits / mining activities need to be licensed and regulated by the relevant authorities such as DMRE, DWS, and DEDEAT
- By-law to encompass all environmental aspects and impacts for all industries – include in the need that amongst other things, conditions specific to business/industrial activities regulations and as well include step-by-step process for contraventions and fines.
- Peace-officers to oversee the implementation of this plan, and enforce environmental by-laws and work hand in hand with Environmental Management Inspectors (EMI's) from the Province/District.

Based on the findings of the SQA , this report has been developed to serve as a strategic tool for promoting sustainable development both throughout the municipality and for specific developmental and economic programs. In this context, the EMP is the foundation for responsible decision making and management of ecological and cultural resources.

6. DESIRED STATE AND GAP ANALYSIS

6.1 GAPS IDENTIFIED

From the SQA, the fundamental gaps of the this EMP are identified as follows:

10. Legal, compliance enforcement and policy context

- **Issue 1:** Lack of environmental management by-laws
- **Issue 2:** Lack of environmental education and awareness
- **Issue 3:** Lack of environmental compliance enforcement
- **Issue 4:** Unmapped business activities, thus, unknown environmental impacts and aspects e.g. parlours and farmers
- **Issue 5:** Lack of an EMP

11. Institutional functioning

- **Issue 1:** Under human resourced environmental function within the Community Services Department
- **Issue 2:** Non- Water Services Authority (WSA) municipality
- **Issue 3:** Lack of Memoranda of Understanding with academic and research institutions to assist with environmental advisory and ongoing environmental monitoring
- **Issue 4:** Prolonged procurement of environmental advisory and related services

12. Climate, Climate Change and Environmental Extreme Events

- **Issue 1:** Climate information and disaster management
- **Issue 2:** Flooding incidents data
- **Issue 3:** Drought preparedness
- **Issue 4:** Municipal climate change mitigation and adaptation strategy

13. Land degradation and road side slope rock instabilities

- **Issue 1:** Soil erosion land degradation information and initiatives
- **Issue 2:** Geological stabilities hotpots
- **Issue 3:** Illegal mining

14. Biodiversity and alien invasive species

- **Issue 1:** Lack of fine scale vegetation and or biodiversity information
- **Issue 2:** Biological Invasions
- **Issue 3:** Municipal scale land use/cover change monitoring

15. Surface water resources management

- **Issue 1:** Improved wastewater management strategies to address the various water quality issues within the municipality
- **Issue 2:** Encroachment of formal and informal development into watercourses encroachment
- **Issue 3:** Erratic rainfall patterns and need for intensified rainwater harvesting methods

16. Groundwater resource management

- **Issue 1:** Municipal groundwater development

17. Socio-economic status quo and livelihoods

- **Issue 1:** Renewable energy sources utilization
- **Issue 2:** Water conservation

18. Solid waste management

- **Issue 1:** Inadequate waste disposal methods
- **Issue 2:** Unsound management of landfill sites as well as unlicensed landfill sites
- **Issue 3:** No solid-waste management policy nor by-laws

19. Archeological, Cultural and Heritage resources management

- **Issue 1:** No centralized municipal heritage repository

6.2 GAP ANALYSIS BETWEEN CURRENT AND DESIRED ENVIRONMENTAL STATE

During the development of the EMP a number of gaps and needs were identified. Gaps and needs were identified based on the SQA, interviews with stakeholders, field investigations, inspection of and a review of the legislative and best practice guidelines. The gaps and needs (**Table 4**) are identified for further consideration and evaluation in the EMF development process:

Gaps and needs have been listed under the following headings:

- Legal, compliance enforcement and policy context
- Institutional functioning, cooperative governance and strategic partnerships
- Climate, Climate Change and Environmental Extreme Events
- Land degradation and road side slope rock instabilities
- Biodiversity and alien invasive species
- Surface water resources management
- Groundwater resource management
- Socio-economic status quo and livelihoods
- Solid waste management
- Archeological, Cultural and Heritage resources management

Table 4. Environmental needs and gaps

Gaps	Needs
Legal, regulatory and policy context	
Lack of environmental management by-laws	• Compile and gazette an environmental management and health by-law to regulate environmental compliance for municipal specific issues. • By-law to encompass all environmental aspects and impacts for all industries – include in the need that amongst other things, conditions specific to business/industrial activities regulations and as well include step-by-step process for contraventions and fines.
Lack of environmental education and awareness	• Development of ward-based environmental education and awareness programmes • Collaboration between Community Services, ISD, ward councilor and ward committees to facilitate dissemination of the initiatives

Gaps	Needs
Lack of environmental compliance enforcement	• Peace-officers enforcement compliance to the municipal by-laws and environmental law and work hand in hand with Environmental Management Inspectors (EMI's) • Predefined procedure for handling and process transgressions and fines
Unmapped business activities, thus, unknown environmental impacts and aspects	• A business register that can keep track of and understand potential aspects and impacts on the environment imposed by said businesses e.g. parlors and farmers
Lack of an EMP	• Develop a municipal EMP to guide on how environmental matters within the municipality should be dealt with • Initiate financial year end reviews as necessary • Implement a 5-yearly review of the EMP to ensure relevance and alignment with other sector plans such IDP ,SDP, and IWMP
Institutional functioning	
Under human resourced environmental function within the Community Services Department	• Appoint an environmental management resource with specialization in integrated environmental management and GIS to oversee the implementation of the EMF and other municipal environmental management matters
Non- Water Services Authority (WSA) municipality	• Foster District Municipality clear plans and commitments to prioritize all WSA mandates within the municipality to alleviate the current environmental and health pollution linked to lack of WSA services
Lack of Memoranda of Understanding with academic and research institutions to assist with environmental advisory and ongoing environmental monitoring	• Establish MOUs with universities and research initiations on long-terms environmental monitoring and scientific advisory matters
Prolonged procurement of environmental advisory and related services	• Establish a panel of environmental services professionals over the 5-year period of this plan to implement selected programmes of this EMP
Climate, Climate Change and Environmental Extreme Events	
Climate information and disaster management	• Dedicated link to retrieve / obtain inform from SAWC as is available/ in advance prior to public statements / notices. • Prioritising the development of knowledge generation and information management systems that increase our ability to measure and predict climate change and, especially extreme weather events, floods, droughts and forest and veld fires, and their impacts on people and the environment. •
Flooding incidents data	• Development of a database and geospatial repository of flood prone areas to enable effective development planning, mitigation response and adaptation strategies
Drought preparedness	• Development of an integrated drought prepared and response plan • Develop accessible GIS database for spatial distribution of areas severely and moderately affected by desertification, land degradation and drought.
Municipal climate change mitigation and adaptation strategy	• Develop a municipal climate change mitigation and adaptation strategy

Gaps	Needs
Land degradation and road side slope rock instabilities	
Soil erosion land degradation information and initiatives	• Soil erosion and land degradation maps and or geospatial information and monitoring • Develop accessible GIS database for spatial distribution of areas severely and moderately affected by land degradation. • Identification of communities and focal landscapes at high risk of desertification, land degradation and drought. • Pragmatic assessment of rehabilitation options available for different areas within the municipality • Soil erosion and land degradation curbing initiatives • Funding mechanisms to support land owners, communities and conservation entities to implement sustainable land use management have been established and are functioning. • Strengthening communities' ability to adapt to the effects of desertification, land degradation and drought. • Reduce the combined impacts of climate change and Desertification, Land Degradation, and Drought (DLDD) by protecting and conserving ecosystems and their services, thereby increasing the capacity of communities to adapt to drought.
Geological instabilities hotpots	• Development of a spatial repository of areas of geological instabilities induced by natural and anthropogenic mass movements such as rock controls. • Informing SANRAL/ Department of Transport (DOT) or Joe Gqabi District Municipality (JGDM) of geological instabilities occurrences along major roads within the municipal jurisdiction • Encouraging road users to report to the municipality or any other relevant authorities. • Ongoing engagements with the lead authorities on prioritization of mitigation measures implementation
Illegal mining	• Information sharing with DMRE on permitted mining activities within the municipality • Regulating of mining activities (sand and quarries) within the municipality through the provided information utilizing Peace Officers and EMIs
Biodiversity	
Lack of fine scale vegetation and or biodiversity information	• Development of Bioregional Plan Section 40(1) of the Biodiversity Act to inform land-use planning, environmental assessment and authorisations, and natural resource management by a range of sectors whose policies and decisions impact on biodiversity •
Biological Invasions	• Data on the distribution and abundance of alien species within the municipality constructed as a sub-set of the national invasive distribution • Development of a municipal specific alien invasive plants management plan • Ongoing monitoring, control and eradication of alien invasive species in particular vegetation to improve hydrological resources availability and integrity • Funding for environmental causes, e.g. Working for Water and/or Working for Fire.
Municipal scale land use/cover change monitoring	• Conduct municipal scale land use/cover change modelling utilizing open source remote sensing data to augment the national land cover data
Surface water resources	

Gaps	Needs
Improved wastewater management strategies to address the various water quality issues within the municipality	• Implementation of Districts WSA mandates • Development of municipal WWTW and WTW I master infrastructure plan • Conditional assessments to investigate options of upgrading the WWTW facilities • Upgrades/ Refurbishment of WWTW for municipal needs to achieve the desired effluent discharge quality • Upgrade/refurbish WTW • Permit WWTW & WTW as per Section 40 of the National Water Act • Operate the facilities in line with legislation and the issued permits • Continuous resource quality monitoring ensuring compliance with generally accepted limits for effluent discharge into resources • Maintaining of records for effluent discharge to ensure compliance with water quality limits • Routine maintenance of effluent treatment works and its sewerage network to prevent leakages into the environment and the aquatic resources • Development and operation & maintenance of infrastructure • To implement interventions such as Water Conservation and Water Demand Management Strategy to reduce demand by improving efficiency, adopting new technologies and reducing losses • Increase its human and financial resources capacity to operate, maintain and manage existing infrastructure with urgent attention.
Encroachment of formal and informal development into watercourses encroachment	• Watercourses and wetlands are no-go areas for developments except for those that inherently need to occur within these ecosystems e.g. bridges. Where other development need to encroachment such, the mitigation hierarchy must be demonstrated to have been fully implemented and that no feasible and reasonable alternatives exist other than these delicate systems • Implementation of buffers (e.g. 32 -100 m) around water resources to afford protection from formal and informal development encroachment
Erratic rainfall patterns and water yield/supply declines	• Map community needs for rainwater harvesting needs through ward councilors • Intensify provision and installation of rainwater harvesting infrastructure an equipment
Groundwater	•
Municipal groundwater development	• Development of a municipal groundwater development plan understand groundwater potential and inform municipal water supply to rural communities • Establishment of a municipal-based borehole registration, water yield utilization metering requirements to ensure that the municipality has sufficient groundwater information within its jurisdiction • Water conservation and demand management to include groundwater resources - Achieve significant savings by all sectors.
Socio-economic status quo	
Renewable energy sources utilization	• Integrated energy development plan to consider implementation of clean energy sources such as solar to reduce municipal carbon footprint and reliance on the coal generated electricity • Through, LED and Town Planning, amongst others , identify potential land parcels and investors for energy development project

Gaps	Needs
Solid waste management	
Inadequate waste disposal methods	• Implementation of the Integrated Waste Management Plan (IWMP).
Unsound management of landfill sites as well as unlicensed landfill sites	• To ensure environmentally compliant operations and management of landfill sites • License all waste landfill sites and solid waste facilities within the municipality • All existing and planned landfill sites and waste facilities should be properly engineered to prevent, minimise and mitigation associated environmental impacts
No solid-waste management policy nor by-laws	• Development of a waste management policy • Compilation and gazette of a solid waste management by-laws
History and Heritage	
No centralized municipal heritage repository	• A local repository in text, artifacts and geospatial formats shall be important to preserve and conserve these important environmental resources for the present and future generations.

6.3 GOALS AND OBJECTIVES

The goals and objectives are used to address any potential shortcomings or necessary improvements identified within the current environmental management system. Goals are long term aspirations for environmental management, long term desired result which can be accomplished through various projects. Goals are long-term aspirations for environmental management, while objectives are more focused, measurable targets which, if implemented correctly, will allow the municipality to reach the identified goals.

Table 5. Goals and objectives terminology

Term	Description
Goal	**Goals** are long term aspirations for environmental management, long term desired result which can be accomplished through various projects. Goals are not necessarily measurable but instead present a long-term desired end state for the municipality.
Objective	**Objectives** are more focused, measurable targets which, if implemented correctly, will allow the municipality to reach the identified goals. Measurable outputs which, once completed, will contribute to the accomplishment of a goal. Objectives will have deadlines to drive their implementation.
Actions and targets	Smaller projects which when combined will fulfil the requirement of an objective.

6.3.1 GOALS FOR THE MUNICIPALITY

A total of ten goals were identified for the Senqu LM. The development of these goals has been informed by the situation analysis and gap and needs assessment.

1. Legally conforming and enforced environmental management facilitated by municipal specific by-laws drawing from national and provincial legislation
2. Improved institutional functioning and capacity, strengthened cooperative governance and leveraging of strategic partnerships for environmental stewardship
3. Enhance Resilience to Climate Change and Environmental Extreme Events
4. Protection and rehabilitation of terrestrial ecosystems from land degradation
5. Forster municipal-specific biodiversity conservation planning to conserve biological diversity and facilitate development
6. Enhance protection of surface water resources, improve water quality, water availability and ecosystem health
7. Conserve and protect groundwater
8. Contribute to improved socio-economic development and livelihoods
9. Improved solid waste management

10. Preserve cultural, historical and heritage resources of the municipality for future generations

6.3.2 OBJECTIVES AND ALTERNATIVES

The following objectives and alternatives, in context of the aforementioned goals, have been identified for the EMP (). The preferred alternatives identified in this section will be taken forward into the implementation plan.

Table 6. *EMF objectives and targets*

OBJECTIVE	ACTIONS AND TARGETS	ALTERNATIVES
Goal 1: Legally conforming and enforced environmental management facilitated by municipal specific by-laws drawing from national and provincial legislation		
1.1 Environmental management by-laws	1.1.1 Compile and gazette an environmental management and health by-law to regulate environmental compliance for municipal specific issues.	The municipality can either: Utilize inhouse expertise to develop the environmental by-law to address the issues in this report or Appoint a qualified service provider to render the services.
	1.1.2 By-law to encompass all environmental aspects and impacts for all industries – include in the need that amongst other things, conditions specific to business/industrial activities regulations and as well include step-by-step process for contraventions and fines.	There are no alternatives for this action as there are no environmental by-laws currently in existence for both the district and Senqu Local Municipality.
1.2 Environmental education and awareness	1.2.1 Development of environmental education and awareness programmes.	The municipality to utilize in house expertise or outsource the services to external service providers The awareness programmes can be tied and or to existing community engagement programmes and to focus on environmental issues specific to the wards
	1.2.2 Collaboration between Community Services, ISD, ward councilor and ward committees to facilitate dissemination of the awareness.	Establish the exact pathways and processes to be followed to realize the collaboration between the parties for implementing the environmental education and awareness programmes.
1.3 Environmental compliance enforcement	1.3.1 Appoint peace-officers for the municipality	Alternatives regarding this actions could entail: • Appoint already trained peace-officers externally • Upskill / train the existing staff internally. • Outsource to suitably qualified law enforcement companies.
	1.3.2 Peace-officers to champion compliance enforcement of the by-laws and environmental law and work hand in hand with Environmental Management Inspectors (EMI's)	• There is no feasible alternative for this action. This the primary role of the peace-officers.
	1.3.3 Predefined procedure for handling and process transgressions and fines	• This can be part of the by-law development process, the procedure and a schedule of fines for common transgressions.

OBJECTIVE	ACTIONS AND TARGETS	ALTERNATIVES
		• A legally sound informed standalone procedure can also be developed
1.4 Municipal business register	1.4.1 Compile a business register that can keep track of and understand potential aspects and impacts on the environment imposed by said businesses.	There is no alternative for this action.
1.5 EMP development, implementation and review	1.5.1 Develop a municipal EMP to guide on how environmental matters within the municipality should be dealt with.	There is no alternative for this action.
	1.5.2 Initiate financial year end reviews as necessary.	There is no alternative for this action.
	1.5.3 Implement a 5-yearly review of the EMP to ensure relevance and alignment with other sector plans such IDP ,SDP, and IWMP.	There is no alternative for this action.
Goal 2: Improved institutional functioning and capacity, strengthened cooperative governance and leveraging of strategic partnerships for environmental stewardship		
2.1 To enhance human resource capacity of the environmental function within the Community Services Department	2.1.1 Appoint an environmental management officer with specialization in integrated environmental management and GIS to oversee the implementation of the EMP and other municipal environmental management matters.	The alternative to this action could be for the municipality to appoint an environmental consultant to advise on as required basis.
2.2 To improve Water Services Authority (WSA) mandates implementation	2.2.1 Foster District municipality clear plans and commitments to prioritize all WSA mandates within the municipality to alleviate the current environmental and health pollution linked to lack of WSA services	Seek the qualification of as a WSA to manage and deliver all water and sanitation projects delivery.
2.3 Establish Memoranda of Understanding with academic and research institutions to assist with environmental advisory and ongoing environmental monitoring	2.3.1 Identify specialized areas that require academic and research expertise, scientific, technological and training on environmental matters such as land use/change monitoring, Geographic Information Systems applications, long term environmental data collection, to name a few	The municipality under the community services can establish a sub-directorate to focus on these areas of the environment
	2.3.2 Establish MOUs with universities and research initiations on long-terms environmental monitoring and scientific advisory matters	There is no alternative for this action.
2.4 Eliminate prolonged procurement of environmental advisory and related services	2.4.1 Establish a panel of environmental services professionals over the 5-year period of this plan to implement selected programmes of this EMP	The municipality can appoint service providers on as required basis for specific project needs informed by budget availability, amongst other things.
Goal 3: Enhance resilience to Climate Change and Environmental Extreme Events		
3.1 Climate information and disaster management	3.1.1 Dedicated link to retrieve / obtain information from SAWS as is available/ in advance prior to public statements / notices.	There is no alternative to this action.
	3.1.2 Prioritizing the development of knowledge generation and information management systems that increase our ability to measure and predict climate change and, especially extreme weather events, floods, droughts and forest and veld fires, and their impacts on people and the environment.	There is no alternative to this action.
3.2 Flooding incidents data	3.2.1 Development of a database and geospatial repository of flood prone areas to enable effective development planning, mitigation response and adaptation strategies	There is no alternative to this action.

OBJECTIVE	ACTIONS AND TARGETS	ALTERNATIVES
3.3 Drought preparedness	3.3.1 Development of an integrated drought preparedness and response plan	There is no alternative to this action.
	3.3.2 Develop accessible GIS database for spatial distribution of areas severely and moderately affected by desertification, land degradation and drought.	There is no alternative to this action.
3.4 Municipal climate change mitigation and adaptation strategy	3.4.1 Develop a municipal climate change mitigation and adaptation strategy	There is no alternative to this action.
Goal 4: Protection and rehabilitation of terrestrial ecosystems from land degradation		
4.1 Soil erosion land degradation information acquisition and initiatives implementation	4.1.1 Soil erosion and land degradation maps and or geospatial information and monitoring	There is no alternative to this action.
	4.1.2 Develop accessible GIS database for spatial distribution of areas severely and moderately affected by land degradation.	There is no alternative to this action.
	4.1.3 Identification of communities and focal landscapes at high risk of desertification, land degradation and drought.	There is no alternative to this action.
	4.1.4 Pragmatic assessment of rehabilitation options available for different areas within the municipality	There is no alternative to this action.
	4.1.5 Soil erosion and land degradation curbing initiatives	There is no alternative for this action.
	4.1.6 Funding mechanisms to support land owners, communities and conservation entities to implement sustainable land use management have been established and are functioning.	There is no alternative to this action.
	4.1.7 Strengthening communities' ability to adapt to the effects of desertification, land degradation and drought.	There is no alternative to this action.
	4.1.8 Reduce the combined impacts of climate change and DLDD by protecting and conserving ecosystems and their services, thereby increasing the capacity of communities to adapt to drought.	There is no alternative to this action.
4.2 Profile and mitigate geological stabilities hotpots	4.2.1 Development of a spatial repository of areas of geological instabilities induced by natural and anthropogenic mass movements such as rock controls.	There is no alternative to this action.
	4.2.2 Informing SANRAL/ Department of Transport (DOT) or Joe Gqabi District Municipality (JGDM) of geological instabilities occurrences.	There is no alternative to this action.

OBJECTIVE	ACTIONS AND TARGETS	ALTERNATIVES
	4.2.3 Encouraging road users to report to the municipality or any other relevant authorities.	There is no alternative to this action.
	4.2.4 Ongoing engagements with the lead authorities on prioritization of mitigation measures implementation	There is no alternative to this action.
4.3 Monitor mining activities	4.3.1 Information sharing with DMRE on permitted mining activities within the municipality to allow distinction between illegal and bona fide activities	There is no alternative to this action.
	4.3.2 Monitoring of mining activities (sand and quarries) within the municipality through the provided information utilizing Peace Officers and EMIs	Reporting suspicious mining activities for DMRE to investigate and also encourage members of the public to do the same
Goal 5: Forster municipal-specific biodiversity conservation planning to conserve biological diversity and facilitate development		
5.1 Fine scale vegetation and or biodiversity information	5.1.1 Development of Bioregional Plan Section 40(1) of the Biodiversity Act to inform land-use planning, environmental assessment and authorisations, and natural resource management by a range of sectors whose policies and decisions impact on biodiversity	There is no alternative to this action.
5.2 Biological Invasions control	5.2.1 Data on the distribution and abundance of alien species within the municipality constructed as a sub-set of the national invasive distribution	The municipality to collect the data using its internal resources or appoint service providers to undertake the exercise. Take advantage of the Youth Employment Services (YES) programme, training participants on invasion plants identification, Geographic Positioning System (GPS) use for geotagging and field data recording for this action.
	5.2.2 Development of a municipal specific alien invasive plants management plan	There is no alternative to this action.
	5.2.3 Ongoing monitoring, control and eradication of alien invasive species in particular vegetation to improve hydrological resources availability and integrity.	There is no alternative to this action.
	5.2.4 Seek funding for alien plants control from avenues such as Working for Water and/or Working for Fire or the Provincial Department	The municipality can finance these project from its budget.
Goal 6: Enhance protection of surface water resources, improve water quality, water availability and ecosystem health		
6.1 Improved wastewater management strategies to address the various water quality issues within the municipality	6.1.1 Implementation of Districts WSA mandates	There is no alternative to this action.
	6.1.2 Development of municipal WWTW and WTW master infrastructure plan	There is no alternative to this action.
	6.1.3 Conditional assessments to investigate options of upgrading the WWTW facilities	There is no alternative to this action.
	6.1.4 Upgrades/ Refurbishment of WWTW for municipal needs to achieve the desired effluent discharge quality	There is no alternative to this action.
	6.1.5 Upgrade/refurbish WTW	There is no alternative to this action.
	6.1.6 Permitting the WWTW & WTW as per Section 40 of the National Water Act	There is no alternative to this action.
	6.1.7 Operate the facilities in line with legislation and the issued permits	There is no alternative to this action.

OBJECTIVE	ACTIONS AND TARGETS	ALTERNATIVES
	6.1.8 Continuous resource quality monitoring ensuring compliance with generally accepted limits for effluent discharge into resources	There is no alternative to this action.
	6.1.9 Maintaining of records for effluent discharge to ensure compliance with water quality limits	There is no alternative to this action.
	6.1.10 Routine maintenance of effluent treatment works and its sewerage network to prevent leakages into the environment and the aquatic resources	There is no alternative to this action.
	6.1.11 Development and operation & maintenance of infrastructure	There is no alternative to this action.
	6.1.12 To implement interventions such as Water Conservation and Water Demand Management Strategy to reduce demand by improving efficiency, adopting new technologies and reducing losses	There is no alternative to this action.
	6.1.13 Increase its human and financial resources capacity to operate, maintain and manage existing infrastructure with urgent attention.	There is no alternative to this action.
6.2 Prevent encroachment of formal and informal development into watercourses encroachment	6.2.1 Watercourses and wetlands are no-go areas for developments except for those that inherently need to occur within these ecosystems e.g. bridges. Where other development need to encroachment such, the mitigation hierarchy must be demonstrated to have been fully implemented and that no feasible and reasonable alternatives exist other than these delicate systems	There is no alternative to this action.
	6.2.2 Implementation of buffers (e.g. 32 -100 m) around water resources to afford protection from formal and informal development encroachment	Ensure the relevant EIA process is followed for all development within and close to watercourses and wetlands to obtain specialist recommended buffers to specific development types.
Goal 7: Conserve and protect groundwater		
7.1 Municipal groundwater development and resource management	7.1.1 Development of a municipal groundwater development plan, understand groundwater potential and inform municipal water supply to rural communities.	There is no alternative to this action.
	7.1.2 Establishment of a municipal-based borehole registration, water yield utilization metering requirements to ensure that the municipality has sufficient groundwater information within its jurisdiction.	There is no alternative to this action.
	7.1.3 Water conservation and demand management to include groundwater resources - Achieve significant savings by all sectors.	There is no alternative to this action.
Goal 8: Contribute to improved socio-economic development and livelihoods		
8.1 Renewable energy sources utilization	8.1.1 Integrated energy development plan to consider implementation of clean energy sources such as solar to reduce municipal carbon footprint and reliance on the coal generated electricity.	There is no alternative to this action.
8.2 Water supply improvements	8.2.1 Profile rainwater harvesting needs across the municipality	The action can be component of a municipal water demand and conservation strategy/ plan
	8.2.2 Intensification of rainwater harvesting methods	There is no alternative to this action.
Goal 9: Improved solid waste management		

OBJECTIVE	ACTIONS AND TARGETS	ALTERNATIVES
9.1 Improve solid waste management	9.1.1 Implementation of the Integrated Waste Management Plan (IWMP).	There is no alternative to this action.
9.2 Sound management of landfill sites as well as unlicensed landfill sites	9.2.1 To ensure environmentally compliant operations and management of landfill sites.	There is no alternative to this action.
	9.2.2 License all waste landfill sites and solid waste facilities within the municipality.	There is no alternative to this action.
	9.2.3 All existing and planned landfill sites and waste facilities should be properly engineered to prevent, minimise and mitigation associated environmental impacts.	The alternative would be for this infrastructure to be retrospectively upgraded to be up to environmental standard.
9.3 Develop solid-waste management policy and by-laws	9.3.1 Development of a waste management policy.	There is no alternative to this action.
	9.3.2 Compilation and gazette of a solid waste management by-laws.	There is no alternative to this action.
Goal 10: Preserve cultural, historical and heritage resources of the municipality for future generations.		
10.1 Establish and maintain centralized municipal heritage repository	10.1.1 A local repository in text, artifacts and geospatial formats shall be important to preserve and conserve these important environmental resources for the present and future generations.	Involve communities to assist with safeguarding these resources as they know these local sites.

7. ENVIRONMENTAL MANAGEMENT PLAN

The following section contains an implementation plan. The implementation plan outlines the following per project:

- Project priority;
- Timeframes;
- Anticipated budget;
- Responsibility for implementation of the project; and
- Potential funding sources.

Projects will be assigned a priority from low to high. While all projects in the implementation plan should be implemented, in the event that budget for waste project is cut the high priority projects should be implemented before low priority projects.

Table 7. Implementation Plan

No	Action	Priority	Timeframe (FY)	Budget	Funding source	Responsibility
Goal 1: Legally conforming and enforced environmental management facilitated by municipal specific by-laws drawing from national and provincial legislation						
1.1 Environmental management by-laws						
1.1.1	Compile and gazette an environmental management and health by-law to regulate environmental compliance for municipal specific issues.	High	2025/26	R200 K	SLM	SLM through an appointed Environmental Consultant and / Lawyer
1.1.2	By-law to encompass all environmental aspects and impacts for all industries – include in the need that amongst other things, conditions specific to business/industrial activities regulations and as well include step-by-step process for contraventions and fines.					
1.2 Environmental education and awareness						
1.2.1	Development of environmental education and awareness programmes.	Medium	2025/26 - ongoing	Nil. This is to be conducted internally.	SLM	SLM
1.2.2	Collaboration between Community Services, ISD, ward councilor and ward committees to facilitate dissemination of the awareness.					
1.3 Environmental compliance enforcement						
1.3.1	Appoint peace-officers for the municipality	Medium	2025/26 2026/27 2027/28	R1M	SLM	SLM through an appointed accredited law enforcement training institution
1.3.2	Peace-officers to champion compliance enforcement of the by-laws and environmental law and work hand in hand with Environmental Management Inspectors (EMI's)	Medium	2027/28 - ongoing	Nil. This is to be conducted internally.	N/A	SLM

No	Action	Priority	Timeframe (FY)	Budget	Funding source	Responsibility
1.3.3	Predefined procedure for handling and process transgressions and fines	High	2025/26	R200 K	SLM	SLM through an appointed Environmental Consultant and / Lawyer
1.4 4 Municipal business register						
1.4.1	Compile a business register that can keep track of and understand potential aspects and impacts on the environment imposed by said businesses.	High	2025/26	Nil. To be done internally.	N/A	SLM
1.5 EMP compilation, implementation and review						
1.5.1	Develop a municipal EMP to guide on how environmental matters within the municipality should be dealt with.	High	2024/25-	R345 K	SLM	SLM through an appointed Environmental Consultant
1.5.2	Initiate financial year end reviews as necessary.	Medium	2025/26- ongoing	Nil. To be done internally.	N/A	SLM
1.5.3	Implement a 5-yearly review of the EMP to ensure relevance and alignment with other sector plans such IDP ,SDP, and IWMP.	Medium	2030	R500K	SLM	SLM
Goal 2: Improved institutional functioning and capacity, strengthened cooperative governance and leveraging of strategic partnerships for environmental stewardship						
2.1 To enhance human resource capacity of the environmental function within the Community Services Department						
2.1.1	Appoint an environmental management officer with specialization in integrated environmental management and GIS to oversee the implementation of the EMF and other municipal environmental management matters.	High	2025/26	R400K	SLM	SLM
2.2 To improve Water Services Authority (WSA) mandates implementation						
2.2.1	Foster District municipality clear plans and commitments to prioritize all WSA mandates within the municipality to alleviate the current environmental and health pollution linked to lack of WSA services	High	2025/26	Nil. To be done internally.	N/A	SLM
2.3 Establish Memoranda of Understanding with academic and research institutions to assist with environmental advisory and ongoing environmental monitoring						
2.3.1	Identify specialized areas that require academic and research expertise, scientific, technological and training on environmental matters such as land use/change monitoring, Geographic Information Systems applications, long term environmental data collection, to name a few	High	2025/26	Nil. To be done internally.	N/A	SLM

No	Action	Priority	Timeframe (FY)	Budget	Funding source	Responsibility
2.3.2	Establish MOUs with universities and research initiations on long-terms environmental monitoring and scientific advisory matters	High	2025/26	Nil. To be done internally.	N/A	SLM
2.4 Eliminate prolonged procurement of environmental advisory and related services						
2.4.1	Establish a panel of environmental services professionals over the 5-year period of this plan to implement selected programmes of this EMP	High	2030	Nil. To be done internally.	N/A	SLM
Goal 3: Enhance resilience to Climate Change and Environmental Extreme Events						
3.1 Climate information and disaster management						
3.1.1	Dedicated link to retrieve / obtain inform from SAWC as is available/ in advance prior to public statements / notices.	High	2025 - 2026	Nil. This is to be implemented internally.	N/A	SLM
3.1.2	Prioritizing the development of knowledge generation and information management systems that increase our ability to measure and predict climate change and, especially extreme weather events, floods, droughts and forest and veld fires, and their impacts on people and the environment.	High	2025 - 2026	Nil. This is to be implemented internally.	N/A	SLM
3.2 Flooding incidents data						
3.2.1	Development of a database and geospatial repository of flood prone areas to enable effective development planning, mitigation response and adaptation strategies.	High	2025 - 2026	Nil. This is to be implemented internally.	N/A	SLM
3.3 Drought preparedness						
3.3.1	Development of an integrated drought prepared and response plan	High	2025/26	R300K	SLM	SLM through an appointed Environmental Consultant
3.3.2	Develop accessible GIS database for spatial distribution of areas severely and moderately affected by desertification, land degradation and drought.	Low	2025/26	R200K	SLM	SLM through an appoint GIS Specialist
3.4 Municipal climate change mitigation and adaptation strategy						
3.4.1	Develop a municipal climate change mitigation and adaptation strategy	High	2025/26	R1M	SLM	SLM through an appointed Environmental Consultant
Goal 4: Protection and rehabilitation of terrestrial ecosystems from land degradation						
4.1 Soil erosion land degradation information and initiatives implementation						

No	Action	Priority	Timeframe (FY)	Budget	Funding source	Responsibility
4.1.1	Soil erosion and land degradation maps and or geospatial information and monitoring	Medium	2025-2030	R800 K	SLM	SLM through an appoint GIS Specialist
4.1.2	Develop accessible GIS database for spatial distribution of areas severely and moderately affected by land degradation.	Low	2025 - 2027	R2M	SLM	SLM through an appoint GIS Specialist
4.1.3	Identification of communities and focal landscapes at high risk of desertification, land degradation and drought.	Medium	2025 - 2030	Nil. This can be done internally.	N/A	SLM
4.1.4	Pragmatic assessment of rehabilitation options available for different areas within the municipality	Low	2025 - 2030	R1.5M	DEDEAT DFFE	SLM through an appointed Contractor(s) and professional service providers
4.1.5	Soil erosion and land degradation curbing initiatives	Low	2025 - 2030	R40M	DEDEAT DFFE	SLM through an appointed Contractor(s) and professional service providers
4.1.6	Funding mechanisms to support land owners, communities and conservation entities to implement sustainable land use management have been established and are functioning.	Medium	2025 - 2030	Nil. This can be done internally.	N/A	SLM
4.1.7	Strengthening communities' ability to adapt to the effects of desertification, land degradation and drought.	Medium	2025 - 2030	Nil. This can be done internally.	N/A	SLM
4.1.8	Reduce the combined impacts of climate change and DLDD by protecting and conserving ecosystems and their services, thereby increasing the capacity of communities to adapt to drought.	Medium	2025 - 2030	Nil. This can be done internally.	N/A	SLM
4.2 Profile and mitigate geological stabilities hotpots						
4.2.1	Development of a spatial repository of areas of geological instabilities induced by natural and anthropogenic mass movements such as rock controls.	Medium	2027/28	R700K	SANRAL JGDM	SLM through an appointed environmental / geological consulting service provider
4.2.2	Informing SANRAL/ Department of Transport (DOT) or Joe Gqabi District Municipality (JGDM) of geological instabilities occurrences.	Medium	2025 - 2030	Nil. To be done internally.	N/A	SLM
4.2.3	Encouraging road users to report to the municipality or any other relevant authorities.	Medium	2025 - 2030	Nil. To be done internally.	N/A	SLM
4.2.4	Ongoing engagements with the lead authorities on prioritization of mitigation measures implementation.	Medium	2025 - 2030	Nil. To be done internally.	N/A	SLM

No	Action	Priority	Timeframe (FY)	Budget	Funding source	Responsibility
4.3 Illegal mining						
4.3.1	Information sharing with DMRE on permitted mining activities within the municipality to allow distinction between illegal and bona fide activities	Medium	2025 - 2030	Nil. To be done internally.	N/A	SLM
4.3.2	Monitoring of mining activities (sand and quarries) within the municipality through the provided information utilizing Peace Officers and EMIs	Medium	2025 - 2030	Nil. To be done internally.	N/A	SLM
Goal 5: Manage and conserve biological diversity						
5.1 Fine scale vegetation and or biodiversity information						
5.1.1	Development of Bioregional Plan Section 40(1) of the Biodiversity Act to inform land-use planning, environmental assessment and authorisations, and natural resource management by a range of sectors whose policies and decisions impact on biodiversity	High	2026/27	R3M	SLM	SLM through an appointed Environmental Specialist
5.2 Biological plant invasion control						
5.2.1	Data on the distribution and abundance of alien species need to be collected, collated, and integrated into national and global databases to facilitate the planning of interventions.	High	2025/26	R2M	SLM DFFE DEDEAT JGDM	SLM through an appointed Environmental Specialist
5.2.2	Development of a municipal specific alien invasive plants management plan	High	2025/26	R1M	DFFE DEDEAT JGDM	SLM through an appointed Environmental Specialist
5.2.3	Ongoing monitoring, control and eradication of alien invasive species in particular vegetation to improve hydrological resources availability and integrity	Low	2025 - 2030	R7M	DFFE DEDEAT JGDM	SLM through an appointed Contractor(s)
5.2.4	Seek funding for alien plants control from avenues such as Working for Water and/or Working for Fire or the Provincial Department	High	2025 - 2030	Nil. To be done internally.	N/A	SLM
Goal 6: Enhance protection of surface water resources, improve water quality, water availability and ecosystem health						
6.1 Improved wastewater management strategies to address the various water quality issues within the municipality						
6.1.1	Implementation of Districts WSA mandates	High	2025 - 2030	R500 M	JGDM DWS	JGDM through appointed Contractor(s)
6.1.2	Development of municipal WWTW and WTW master infrastructure plan	High	2025 - 2030	R1M	JGDM DWS	JGDM through appointed Contractor(s)

No	Action	Priority	Timeframe (FY)	Budget	Funding source	Responsibility
6.1.3	Conditional assessments to investigate options of upgrading the WWTW facilities	High	2025 - 2030	R10M	JGDM DWS	JGDM through appointed Contractor(s)
6.1.4	Upgrades/ Refurbishment of WWTW for municipal needs to achieve the desired effluent discharge quality	High	2025 - 2030	R100M	JGDM DWS	JGDM through appointed Contractor(s)
6.1.5	Upgrade/refurbish WTW	High	2025 - 2030	R100M	JGDM DWS	JGDM through appointed Contractor(s)
6.1.6	Permitting the WWTW & WTW as per Section 40 of the National Water Act	High	2025 - 2030	R1 M	JGDM DWS	JGDM through appointed Contractor(s)
6.1.7	Operate the facilities in line with legislation and the issued permits	High	2025 - 2030	Nil. This can be done internally.	JGDM DWS	JGDM through appointed Contractor(s)
6.1.8	Continuous resource quality monitoring ensuring compliance with generally accepted limits for effluent discharge into resources	High	2025 - 2030	Nil. This can be done internally.	JGDM DWS	JGDM through appointed Contractor(s)
6.1.9	Maintaining of records for effluent discharge to ensure compliance with water quality limits	High	2025 - 2030	Nil. This can be done internally.	JGDM DWS	JGDM through appointed Contractor(s)
6.1.10	Routine maintenance of effluent treatment works and its sewerage network to prevent leakages into the environment and the aquatic resources	High	2025 - 2030	Nil. This can be done internally.	JGDM DWS	JGDM through appointed Contractor(s)
6.1.11	Development and operation & maintenance of infrastructure	Medium	2025 - 2030	Nil. This can be done internally.	JGDM DWS	JGDM through appointed Contractor(s)
6.1.12	To implement interventions such as Water Conservation and Water Demand Management Strategy to reduce demand by improving efficiency, adopting new technologies and reducing losses	High	2026/27	R4M	JGDM DWS	SLM through appointed professional service provider
6.1.13	Increase its human and financial resources capacity to operate, maintain and manage existing infrastructure with urgent attention.	Low	2025 - 2030	Nil. This can be done internally.	N/A	SLM
6.2 Prevent encroachment of formal and informal development into watercourses encroachment						
6.2.1	Watercourses and wetlands are no-go areas for developments except for those that inherently need to occur within these ecosystems e.g. bridges. Where other development need to encroachment such, the mitigation hierarchy must be demonstrated to have been fully implemented and that no feasible	High	2025/26	Nil. This can be done internally.	N/A	SLM

No	Action	Priority	Timeframe (FY)	Budget	Funding source	Responsibility
	and reasonable alternatives exist other than these delicate systems					
6.2.2	Implementation of buffers (e.g. 32 -100 m) around water resources to afford protection from formal and informal development encroachment	High	2025 - 2030	Nil. This can be done internally.	N/A	SLM
Goal 7: Conserve and protect groundwater						
7.1 Municipal groundwater development and resource management						
7.1.1	Development of a municipal groundwater development plan understand groundwater potential and inform municipal water supply to rural communities	High	2026/27	R1M	SLM	SLM through appointed professional service provider
7.1.2	Establishment of a municipal-based borehole registration, water yield utilization metering requirements to ensure that the municipality has sufficient groundwater information within its jurisdiction	Medium	2025/26	Nil. To be done internally.	N/A	SLM
Goal 8: Socio-economic development						
8.1 Renewable energy sources utilization						
8.1.1	Integrated energy development plan to consider implementation of clean energy sources such as solar to reduce municipal carbon footprint and reliance on the coal generated electricity	Medium	2026/27	R700K	SLM	SLM through appointed Consulting Engineers
8.2	**Water supply improvements**					
8.2.1	Profile rainwater harvesting needs across the municipality	Medium	2025/26	Nil. To be done internally.	N/A	SLM
8.2.2	Intensification of rainwater harvesting methods	Medium	2026/27	R1M	SLM	SLM through appointed Contractor(s)
Goal 9: Improved solid waste management						
9.1 Improve solid waste management						
9.1.1	Implementation of the Integrated Waste Management Plan (IWMP).	High	2025 - ongoing	Nil.	N/A	SLM
9.2 Sound management of landfill sites as well as unlicensed landfill sites						
9.2.1	To ensure environmentally compliant operations and management of landfill sites.	High	2025 - 2030	R70M	SLM DEDEAT	SLM through appointed Contractor(s)

No	Action	Priority	Timeframe (FY)	Budget	Funding source	Responsibility
9.2.2	License all waste landfill sites and solid waste facilities within the municipality.	High	2025 - 2030	R2M	SLM DFFE DEDEAT	SLM through appointed professional service provider
9.2.3	All existing and planned landfill sites and waste facilities should be properly engineered to prevent, minimise and mitigation associated environmental impacts.	High	2025 - 2030	R30 M	SLM DFFE DEDEAT	SLM through appointed professional service provider
9.3 Establish solid waste management policy and by-laws						
9.3.1	Development of a waste management policy.	Medium	2025/26	Nil. To be done internally.	N/A	SLM
9.3.2	Compilation and gazette of a solid waste management by-laws.	High	2025/26	R200 K	SLM	SLM through an appointed Environmental Consultant and / Lawyer
Goal 10: Preserve cultural, historical and heritage resources of the municipality for future generations.						
10.1 Establish a centralized municipal heritage repository						
10.1.1	A local repository in text, artifacts and geospatial formats shall be important to preserve and conserve these important environmental resources for the present and future generations.	Medium	2025 - 2030	Nil. To be done internally.	N/A	SLM

8. ROLES AND RESPONSIBILITIES

In-order for the Environmental Management Plan to be implemented correctly and efficiently, the various roles and responsibilities need to be clearly laid out for all the role-players, and these roles include:

- Senqu Municipality
- Joe Gqabi District Municipality
- Environmental Practitioners/Consultants
- Relevant Environmental Authorities
- Consulting Engineers
- Contractors
- Specialists
- Political Personnel
- The Community

8.1 SENQU MUNICIPALITY

These are the people or person that will implement the project and are responsible for the way in which the EMP will be executed, effectively becoming the project managers for any targets that need to be achieved by the municipality. The responsibility of implementing the EMP ultimately lies with the Municipality.

8.2 JOE GQABI DISTRICT MUNICIPALITY

The District municipality is the WSA and has the primary mandate to ensure that all functions in connection with water and sanitation are executed in a sound and compliant manner to prevent pollution and environmental health risks.

8.3 ENVIRONMENTAL PRACTITIONERS/CONSULTANTS

These are independent entities that the municipality can appoint to oversee a variety of environmental projects and are responsible for not limited to but including:

- Screening of proposed developments and identification of listed activities from the EIA Regulations and other statutory environmental legislation that a particular project could possibly trigger and advising on a way forward.
- Ensuring environmental compliance for various projects being implemented by the municipality.
- Environmental compliance monitoring and auditing as well as advising contractors working on infrastructure projects to minimize impacts on the environment.
- Scientific research, project planning and project management
- Business plan / proposal development

8.4 RELEVANT ENVIRONMENTAL AUTHORITIES

Certain activities could fall within the jurisdiction of the national/provincial departments of environmental affairs such as the Department of Forestry, Fisheries & Environmental Affairs (DFFE) and Department of Economic Development, Environmental Affairs and Tourism (DEDEAT). Additionally, water related activity could require the intervention of the Department of Water and Sanitation (DWS). The environmental practitioners/consultants would be able to advise the municipality on what entity is required for which environmental activity.

8.5 CONSULTING ENGINEERS

The consulting engineers are of vital importance in the planning and design phase as they are responsible for the planning out of infrastructure development. This information is what will be utilized by the contractors in-order to build the infrastructure effectively. Consulting engineers work closely with environmental consultants to ensure the projects do not adversely affect the environment.

8.6 CONTRACTORS

The contractors are responsible for ensuring compliance with the EMP and its vast array of projects. These entities take instructions from the consulting engineers and execute these instructions by building out the vision of the engineers.

8.7 SPECIALISTS

Specialists are appointed by the municipality or the consultants in-order to deal with specialized work such as invasive plants identification and effective removal methods.

8.8 POLITICAL PERSONNEL

Politicians are going to be key in the sustainable success of this EMP through their support, commitment and mobilization.

8.9 THE COMMUNITY

The public/community can be trusted to partially implement elements of the EMP, specifically those that are on a community level and requiring the cooperation of the public to succeed.

9. MAINTAINING THE EMP

The EMP must be reviewed every 5-years.

10. REFERENCES

Brownlie, S., Walmsley, B., & Tarr, P. (2012). *Guidelines for Involving Biodiversity Specialists in EIA Processes: Edition 3*. The South African National Biodiversity Institute (SANBI).

Council for Geoscience. (2020). South African Mineral Resource Report. Accessed 12 August 2024. Available from: Council for Geoscience Website

Department of Agriculture, Land Reform and Rural Development (DALRRD). (n.d.). Accessed 14 August 2024. Available from https://www.dalrrd.gov.za/

Department of Environmental Affairs, 2019. *Impact Assessment of Veld Fires in the Eastern Cape*. Pretoria: Department of Environmental Affairs.

Department of Environmental Affairs, 2023. *Climate Change and Extreme Weather Events Report*. Pretoria: Department of Environmental Affairs.

Department of Environment, Forestry and Fisheries. (2021). *South Africa's National Biodiversity Strategy and Action Plan 2015–2025*. DEFF, Pretoria.

Department of Environment, Forestry and Fisheries (DFFE). (2022). South Africa's Biodiversity and Conservation Status. Accessed 14 August 2024. Available from https://www.environment.gov.za/

Department of Water and Sanitation, 2019. *Drought Impact and Response in the Eastern Cape*. Pretoria: Department of Water and Sanitation.

Department of Water and Sanitation. (2023). Integrated Water Resources Management for the Upper Orange Water Management Area. Retrieved from https://www.dws.gov.za/

Department of Water and Sanitation, 2023. *Eastern Cape Wetland Status Report*. Pretoria: Department of Water and Sanitation.

Department of Water and Sanitation, 2023. *Eastern Cape Water Resource Status Report*. Pretoria: Department of Water and Sanitation.

Department of Water and Sanitation, 2024. *National Wetland Inventory*. Pretoria: Department of Water and Sanitation.

Eastern Cape Biodiversity Conservation Plan (ECBCP). (2017). Accessed 12 August 2024. Available from: Eastern Cape Government Website

Eastern Cape Government. (2023). Water Resources and Management in the Eastern Cape: A Review. Retrieved from https://www.ecprov.gov.za/

Eastern Cape Provincial Government. (2021). Provincial Spatial Development Framework. Accessed 12 August 2024. Available from: Eastern Cape Government Website

FAO. (2022). *Global Soil Information*. Accessed 21 August 2024. Available at: https://www.fao.org/soils-portal/en/.

IUCN. (2023). *The IUCN Red List of Threatened Species*. Version 2023-1. Available at: https://www.iucnredlist.org

Joe Gqabi District Municipality. (2017). Integrated Development Plan 2017-2022. Accessed 12 August 2024. Available from: Joe Gqabi District Municipality Website

Joe Gqabi District Municipality. (2022). Water Services Development Plan 2022/2023-2026/2027. Available at: Joe Gqabi District Municipality Website

Miller, B.A. and Juilleret, J., 2020. The colluvium and alluvium problem: Historical review and current state of definitions. *Earth-Science Reviews*, *209*, p.103316.

Qongo, S.C., 2013. *Assessing the contribution of rural tourism to local economic development as a strategy for poverty alleviation: a case study on the uKhahlamba district–Senqu Municipality in South Africa* (Doctoral dissertation, University of the Western Cape).

SANS Edition2, 2011. SANS 1929:2011 South African National Standard: *Ambient air quality-Limits for common pollutants*

South African National Biodiversity Institute (SANBI). (2019). The Upper Orange River Basin: A Biodiversity Perspective. Retrieved from https://www.sanbi.org/

SANBI. (2022). *South African National Biodiversity Institute Annual Report*. Accessed 21 August 2024. Available at: https://www.sanbi.org/.

South African National Biodiversity Institute. (2023). *National Biodiversity Assessment 2018: The status of South Africa's ecosystems and biodiversity*. SANBI, Pretoria. Accessed 13 August 2024. Available at: https://www.sanbi.org

Senqu Local Municipality. (2023). Integrated Development Plan 2023-2028**.** Available from: Senqu Local Municipality Website.

Senqu Municipality, 2024. *Integrated Waste Management Plan*. Senqu: Senqu Municipality.

Sitorus, S.R., 2010. Land capability classification for land evaluation: A review. *Jurnal Sumberdaya Lahan*, *4*(02).

Stats SA. (2022). **Census 2022**. Accessed 12 August 2024. Available from: Statistics South Africa Website